IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

City of Port Isabel, the Carrizo Comecrudo Tribe of Texas, and Sierra Club, Petitioners, v. Federal Energy Regulatory Commission, Respondent.	)	No. 23-1174

PETITION FOR REVIEW

Pursuant to Section 19(b) of the Natural Gas Act, 15 U.S.C. § 717r(b), Federal Rule of Appellate Procedure 15, and Circuit Rule 15, City of Port Isabel, the Carrizo Comecrudo Tribe of Texas, and Sierra Club hereby petition the United States Court of Appeals for the District of Columbia Circuit for review of the following order of the Federal Energy Regulatory Commission ("Commission"):

1. Order on Remand and Amending Section 7 Certificate, *Rio Grande LNG, LLC & Rio Bravo Pipeline Company, LLC*, Docket Nos. CP16-454, CP16-455, CP20-481, 183 FERC ¶ 61,046 (Apr. 21, 2023).

A copy of the order is attached.

All of the petitioners were intervenors in one or more of the Commission dockets for this order. Petitioners timely filed a request for rehearing of the Order on Remand, which was denied by operation of law. Thus, this Court has jurisdiction to review the Order on Remand pursuant to 15 U.S.C. § 717r(b).

This petition for review is timely filed within 60 days of the Commission's denial of rehearing in accordance with 15 U.S.C. § 717r(b).

Dated: July 10, 2023

Respectfully submitted,

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PETITIONERS' RULE 26.1 STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and Circuit Rule 26.1, Petitioners make the following disclosures:

Sierra Club: Sierra Club has no parent companies, and there are no publicly held companies that have a 10 percent or greater ownership interest in Sierra Club.

Sierra Club, a corporation organized and existing under the laws of the State of California, is a nonprofit organization dedicated to the protection and enjoyment of the environment.

Carrizo Comecrudo Tribe of Texas: The Carrizo Comecrudo Tribe of Texas has no parent companies, and there are no publicly held companies that have

a 10 percent or greater ownership interest in the Carrizo Comecrudo Tribe of Texas.

The Carrizo Comecrudo Tribe of Texas, a corporation organized and existing under the laws of the State of Texas, is a nonprofit organization dedicated to maintaining, preserving, and protecting the tribal identity of the Carrizo Comecrudo Tribe of Texas.

Dated: July 10, 2023

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify under penalty of perjury that on July 10, 2023, I served a copy of the foregoing Petition for Review and Corporate Disclosure Statement by email on the following parties, including all members of the service list in FERC Docket Nos. CP16-454, CP16-455, and CP20-481.

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183 FERC ¶ 61,046
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Acting Chairman;
James P. Danly, Allison Clements,
and Mark C. Christie.

Rio Grande LNG, LLC	Docket Nos. CP16-454-003
	CP16-454-000
Rio Bravo Pipeline Company, LLC	CP16-455-000
	CP16-455-002
	CP20-481-000

ORDER ON REMAND AND AMENDING SECTION 7 CERTIFICATE

(Issued April 21, 2023)

1. The United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) has remanded[1] the Commission's orders authorizing construction and operation of Rio Grande LNG, LLC's (Rio Grande) proposed liquified natural gas terminal project (Rio Grande LNG Terminal) and Rio Bravo Pipeline Company, LLC's (Rio Bravo) proposed pipeline project (Rio Bravo Pipeline Project),[2] directing the Commission to: (1) "explain whether 40 C.F.R. § 1502.21(c) calls for [the Commission] to apply the social cost of carbon protocol or some other analytical framework, as 'generally accepted in the scientific community' within the meaning of the regulation, and if not, why not";[3] and (2) "explain why it chose to analyze the projects' impacts only on [environmental justice] communities in census blocks within two miles of the project sites, or else analyze the projects' impacts on [environmental justice] communities within a different

[1] *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321 (D.C. Cir. 2021) (*Vecinos*).

[2] *Rio Grande LNG, LLC*, 169 FERC ¶ 61,131 (2019) (Order Granting Authorizations under Sections 3 and 7 of the Natural Gas Act) (Authorization Order), *order on reh'g*, 170 FERC ¶ 61,046 (2020) (Rehearing Order). The D.C. Circuit also remanded, in the same opinion, the Commission's order in Texas LNG Brownsville LLC, which the Commission addressed in a separate order issued concurrently. *Texas LNG Brownsville LLC*, 183 FERC ¶ 61,047 (2023).

[3] *Vecinos*, 6 F.4th at 1330.

radius of each project site."[4] Further, the court directed the Commission to revisit its public interest determination under sections 3 and 7 of the Natural Gas Act (NGA).[5]

2. Separately, on June 16, 2020, in Docket No. CP20-481-000, Rio Bravo filed an application pursuant to section 7(c) of the NGA[6] and Part 157 of the Commission's regulations[7] to amend its certificate of public convenience and necessity issued in Order Granting Authorizations Under Sections 3 and 7 of the Natural Gas Act in Docket No. CP16-455-000, which authorized the construction and operation of the Rio Bravo Pipeline Project.[8] As more fully described below, Rio Bravo proposes to reduce the number of authorized compressor stations from three to one, increase the horsepower at the remaining compressor station, eliminate certain measurement facilities, change the operating pressure of the pipelines and header system, and increase the diameter of one of two parallel pipelines (Amendment Project).

3. This order first addresses and grants Rio Bravo's proposed Amendment Project in Docket No. CP20-481-000, subject to certain conditions. Second, the order addresses the issues remanded to the Commission by the court in *Vecinos*. Specifically, on remand we supplement our environmental analysis of both the Rio Grande LNG Terminal and the Rio Bravo Pipeline Project, as amended, by: (1) addressing the argument regarding the social cost of carbon and 40 C.F.R. § 1502.21(c); and (2) updating our analysis of the projects' environmental justice impacts consistent with the Commission's current practice. We reaffirm that the Rio Grande LNG Terminal is not inconsistent with the public interest under NGA section 3, and the Rio Bravo Pipeline Project, as amended, is required by the public convenience and necessity under NGA section 7, as conditioned in the Authorization Order and as modified herein.

I. Background

4. Rio Grande and Rio Bravo are Texas limited liability companies. Rio Grande is a wholly-owned subsidiary of NextDecade LNG, LLC, and Rio Bravo is a direct subsidiary of Spectra Energy Partners, LP (Spectra Energy), which is an indirect, wholly-owned

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[4] *Id*. at 1331.

[5] *Id.* at 1331-32.

[6] 15 U.S.C. § 717f(c).

[7] 18 C.F.R. pt. 157 (2022).

[8] Rio Bravo June 16, 2020 Application to Amend Certificate of Public Convenience and Necessity (Amendment Application).

subsidiary of Enbridge Inc.[9] Upon commencing operations of its Rio Bravo Pipeline Project, Rio Bravo will become a natural gas company within the meaning of section 2(6) of the NGA.[10] As its operations will not be in interstate commerce, Rio Grande will not be a natural gas company as defined in section 2(6) of the NGA, although it will be subject to the Commission's jurisdiction under NGA section 3.

A. 2019 Authorization Order

5. On November 22, 2019, the Commission authorized, under section 3 of the NGA, Rio Grande to construct and operate a new liquified natural gas (LNG) terminal designed to produce a nominal capacity of up to 27 million metric tonnes per annum (MTPA) of LNG for export (Authorization Order).[11] The project facilities will occupy 750.4 acres of land on a 984.2-acre parcel on the northern embankment of the Brownsville Ship Channel in Cameron County, Texas[12] and include five natural gas liquefaction trains, each with a nominal capacity of 5.4 MTPA;[13] four full-containment LNG storage tanks, each with a

[9] At the time the Authorization Order issued granting Rio Bravo its requested certificate, Rio Bravo was a wholly-owned subsidiary of NextDecade LNG, LLC. On March 2, 2020, Spectra Energy acquired Rio Bravo.

[10] 15 U.S.C. § 717a(6).

[11] Authorization Order, 169 FERC ¶ 61,131 at P 5. In August 2016, Rio Grande received authorization from the Department of Energy, Office of Fossil Energy (DOE) to export the project's full capacity, which is equivalent to 1,318 billion cubic feet (Bcf) annually (approximately 3.6 Bcf per day (Bcf/d)) equivalent of natural gas in the form of LNG to countries with which the United States has a Free Trade Agreement (FTA). *Rio Grande LNG, LLC*, DOE/FE Docket No. 15-190-LNG, Order No. 3869 (2016). Assuming a gas density of 0.7 kg/m^3, 3.6 Bcf/d is 26.1 MTPA, which is roughly equivalent to the authorized 27 MTPA. On February 10, 2020, DOE issued an order authorizing Rio Grande to export LNG to non-FTA nations, but with which the U.S. still permits such trade. *Rio Grande LNG, LLC*, DOE/FE Docket No. 15-190-LNG, Order No. 4492 (2020).

[12] The parcel is owned by the Brownsville Navigational District, a political subdivision of Texas that operates the Port of Brownsville. Rio Grande's parent company, NextDecade, executed an Option to Lease the acreage from the Brownsville Navigational District. Authorization Order, 169 FERC ¶ 61,131 at P 7 n.12.

[13] On April 15, 2020, Rio Grande requested that the Commission approve a design change in its implementation plan for the Rio Grande LNG Terminal to reduce the Rio Grande LNG Terminal's number of liquefaction trains from six to five and to optimize parts of the liquefaction design to increase the liquefaction capacity of the five remaining trains from 4.5 million metric tons per annum (MTPA) to 5.4 MTPA each,

net capacity of approximately 180,000 cubic meters (m^3); two LNG carrier loading berths; one 1,500-foot-diameter turning basin; LNG truck loading and unloading facilities with four loading bays; two natural gas liquids truck loading bays; and other facilities such as administrative buildings, a central control building, a workshop, a warehouse, electrical equipment enclosures, a communication system, and other support structures.[14]

6. The Authorization Order also issued a certificate of public convenience and necessity (certificate), under section 7 of the NGA, to Rio Bravo to construct and operate a new interstate natural gas pipeline system designed to provide up to 4.5 billion cubic feet per day (Bcf/d)[15] of firm natural gas transportation capacity from several interconnects in the vicinity of the Agua Dulce Hub in Nueces County, Texas, to Rio Grande's liquefied LNG export terminal on the Brownsville Ship Channel in Cameron County. As approved in the Authorization Order, the Rio Bravo Pipeline comprises: a 2.4-mile-long header system, 135.5 miles of parallel 42-inch-diameter pipelines (referred to as Pipelines 1 and 2); three compressor stations; four metering sites along the header system; two interconnect booster compressor stations, each with a metering site; and other appurtenant facilities.[16] The pipeline project will be constructed in two phases,[17]

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while keeping the total export capacity at 27 MTPA. The Commission granted that request, but we note that the 2019 authorization, as reviewed by the D.C. Circuit in *Vecinos*, authorized and considered the impacts associated with six natural gas liquefaction trains. *See Rio Grande LNG, LLC*, 174 FERC ¶ 61,048, at P 4 (2021) (rehearing order affirming design changes authorized by Commission staff's August 13, 2020 Letter Order).

[14] Authorization Order, 169 FERC ¶ 61,131 at PP 6-7. On November 17, 2021, Rio Grande filed an application pursuant to section 3 of the NGA to amend its authorization to incorporate carbon capture and sequestration (CCS) systems into the approved site and design of the terminal. Rio Grande LNG, LLC, Application for Limited Amendment to Section 3 Authorization, Docket No. CP22-17-000 (Nov. 17, 2021). This application is pending before the Commission.

[15] 4.5 Bcf/d is the equivalent of 4,500,000 dekatherms (Dth) per day assuming one Dth equals one Mcf of gas.

[16] Authorization Order, 169 FERC ¶ 61,131 at PP 1, 9.

[17] Pursuant to the Authorization Order, Rio Bravo's project is required to be made available for service by November 22, 2026. Construction has not commenced for the pipeline project and Rio Bravo has not sought an extension of time.

with the in-service date of Phase 1 coinciding with the commencement of the Rio Grande LNG Terminal operations.[18]

7. The Commission determined, based on the findings in the final Environmental Impact Statement (EIS) for the projects,[19] that the projects' direct and indirect impacts on environmental resources would be temporary or reduced to less-than-significant levels by the implementation of appropriate mitigation measures.[20] As relevant to this proceeding, the Commission concluded that it could not determine the projects' impacts on the environment caused by GHG emissions nor could it determine the significance of the projects' contribution to climate change.[21] The Commission also found that neither the construction nor operation of the projects would result in disproportionately high or adverse environmental and human health impacts on environmental justice communities.[22] The Commission agreed with the conclusions presented in the final EIS and found that the projects, if constructed and operated as described in the final EIS, are environmentally acceptable actions.[23]

B. Rehearing Order

8. On December 23, 2019, Sierra Club and eight other petitioners jointly (Sierra Club) sought rehearing of the Authorization Order. Sierra Club raised numerous concerns, including air quality impacts, environmental justice impacts, mitigation measures, greenhouse gas emissions, and the Commission's public interest determination. Specifically, Sierra Club stated that the Commission violated NEPA by failing to take a

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[18] On March 6, 2020, Commission staff issued a notice to proceed for limited site preparation activities for the Rio Grande LNG facilities. Additionally, on October 14, 2022, in docket number CP16-454-004, the Commission granted Rio Grande a two-year extension of time, to November 22, 2028, to construct and make available for service the Rio Grande LNG Terminal. *Rio Grande LNG, LLC*, 181 FERC ¶ 61,032 (2022), *order on reh'g*, 182 FERC ¶ 61,027 (2023).

[19] The projects' final EIS was issued on April 26, 2019. *See* Commission staff, Rio Grande LNG Project Final EIS, Docket Nos. CP16-454-000 and CP16-455-000 (issued Apr. 26, 2019) (Final EIS).

[20] Authorization Order, 169 FERC ¶ 61,131 at P 22.

[21] *Id.* P 109. *See also* Final EIS at 4-479 – 4-482.

[22] Authorization Order, 169 FERC ¶ 61,131 at P 98. *See also* Final EIS at 4-233 – 4-238; 4-468 – 4-469.

[23] Authorization Order, 169 FERC ¶ 61,131 at P 133.

hard look at whether environmental justice communities will bear a disproportionate share of the negative environmental consequences from the projects.[24] Sierra Club also asserted that the Commission's conclusions regarding its inability to determine whether the projects' GHG emissions and contribution to climate change were significant, and its reasoning as to why it would not use the social cost of carbon protocol to assess the impacts from the projects' GHG emissions were arbitrary.[25]

9. On January 23, 2020, the Commission denied rehearing. The Commission affirmed the Authorization Order's decision to not calculate or apply the social cost of carbon protocol.[26] The Commission concluded that the final EIS adequately identified and addressed impacts on environmental justice communities,[27] and reaffirmed the conclusion from the final EIS and Authorization Order that there would not be any disproportionately high or adverse environmental and human health impacts on those communities.[28] Subsequently, Sierra Club petitioned for review of the Authorization and Rehearing Orders in the D.C. Circuit.

C. The Court's Remand Order

10. On August 3, 2021, the D.C. Circuit remanded the Authorization and Rehearing Orders, holding that the Commission's NEPA analyses of the projects' impacts on climate change and environmental justice communities were deficient under the Administrative Procedure Act (APA), and thus, the Commission "must also revisit its determinations of public interest and convenience under Sections 3 and 7 of the NGA."[29] Specifically, the court held that the Commission failed to address the petitioners' argument concerning the applicability of the Council on Environmental Quality's (CEQ) regulations with respect to whether the social cost of carbon protocol is a "generally accepted" analytical tool for assessing the significance of GHG impacts, thereby

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[24] Sierra Club Request for Rehearing and Stay at 5, 34.

[25] *Id.* at 6.

[26] Rehearing Order, 170 FERC ¶ 61,046 at P 103.

[27] The Rehearing Order stated that "Commission staff concluded that within the census block groups intersected by a two-mile radius around the pipeline facilities and LNG terminal site, the minority population percentages in 24 of the 25 affected tracts exceed the EPA's categorical thresholds to be minority populations or low-income populations, or in most cases both." *Id.* P 64.

[28] *Id.* P 98.

[29] *Vecinos*, 6 F.4th at 1331.

rendering the analysis of the projects' GHG emissions deficient.[30] The court directed the Commission on remand to: "explain whether 40 C.F.R. § 1502.21(c) calls for [the Commission] to apply the social cost of carbon protocol or some other analytical framework, as 'generally accepted in the scientific community' within the meaning of the regulation, and if not, why not."[31]

11. The court also held that the Commission's decision to limit its environmental justice analysis of the projects' impacts to those affecting communities in census blocks within two miles of the project sites was arbitrary,[32] given that the EIS determined that certain environmental effects of the projects would extend beyond that radius (e.g., the court noted that air quality impacts could occur within a radius of 31 miles).[33] The court directed the Commission on remand to explain why it chose to analyze the projects' impacts only on communities within a two-mile radius, or, in the alternative, to analyze the projects' impacts on communities within a different radius from each project site, and to determine whether the Commission's environmental justice conclusion still holds.[34]

12. Additionally, because the Commission's analyses of the projects' impacts on climate change and environmental justice communities were deficient, the court directed the Commission to revisit its public interest and public convenience and necessity determinations.[35]

D. 2020 Rio Bravo Pipeline Amendment Project Proposal

13. On June 16, 2020, in Docket No. CP20-481-000, Rio Bravo filed an application to amend the Rio Bravo Pipeline certificate to: (1) reduce the number of authorized

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[30] *Id.* at 1329.

[31] *Id.* at 1329-30. 40 C.F.R. § 1502.21(c) (2022) provides that "[i]f . . . information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because . . . the means to obtain it are not known, the agency shall include within the environmental impact statement . . . [t]he agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community." In its 2020 rulemaking, CEQ redesignated § 1502.22, "[i]ncomplete or unavailable information" as § 1502.21 in the final rule.

[32] *Vecinos*, 6 F.4th at 1331.

[33] *Id.* at 1330.

[34] *Id.* at 1331.

[35] *Id.*

compressor stations from three to one; (2) increase the horsepower at the remaining compressor station; (3) eliminate certain measurement facilities; (4) change the maximum allowable operating pressure of the pipelines and header system; and (5) increase the diameter of one of the two authorized parallel pipelines. Specifically, Rio Bravo proposes to:

- increase the diameter of Pipeline 1 from 42-inches to 48-inches;
- extend both Pipeline 1 and Pipeline 2 by 0.2 miles, increasing the length of each pipeline from 135.5 miles to 135.7 miles;
- increase the horsepower (hp) of Compressor Station 1 in Kleberg County, Texas, from 180,000 hp to 282,000 hp by replacing the six 30,000-hp natural gas turbine compressor units currently approved with four 43,000-hp natural gas turbine compressor units and two 55,000-hp electric-driven compressor units;
- eliminate a meter station at Compressor Station 1;
- eliminate the 180,000-hp Compressor Station 2, in Kenedy County, Texas, including all related facilities;
- eliminate the 180,000-hp Compressor Station 3 in Cameron County, Texas, including all related facilities except the gas custody transfer meter and pig receivers; and
- eliminate the two interconnect booster stations, and related meter site, in Kenedy County, Texas.

14. The proposed Amendment Project facility modifications described above will increase the capacity associated with Phase 1 (consisting of Pipeline 1, the header system, Compressor Station 1, and related aboveground facilities, including meter stations) from 2.25 Bcf/d to 2.6 Bcf/d, and will decrease the capacity associated with Phase 2 (consisting of Pipeline 2 and the remaining facilities) from 2.25 Bcf/d to 1.9 Bcf/d. The total design capacity of the project will remain 4.5 Bcf/d, as certificated in the Authorization Order.[36] Rio Bravo also proposes to increase the maximum allowable operating pressure (MAOP) of each pipeline from 1,480 pounds per square inch gauge (psig) to 1,825 psig, and to decrease the header system's MAOP from 1,480 psig to 1,200 psig. Other than the 0.2-mile extensions,[37] Rio Bravo does not propose in its

[36] Authorization Order, 169 FERC ¶ 61,131 at P 9.

[37] The 0.2-mile extensions of Pipelines 1 and 2 would be constructed within the boundary of the Rio Grande LNG Terminal in workspace formerly designated for

Amendment Project application any changes to the pipeline route approved in the Authorization Order.[38]

15. Rio Bravo also requests approval to revise the project rates and its *pro forma* tariff records to: (1) reflect an increase in the overall estimated cost of constructing the project facilities; (2) establish initial recourse rates for Phase 1 service; and (3) establish revised initial recourse rates for the entire project following the Phase 2 in-service date.[39] In addition, in order to reflect the addition of electric-driven turbine compressor units at reconfigured Compressor Station 1, Rio Bravo proposes to apply initial electric power charges and an electric power charge tracker and true-up mechanism upon the in-service date of Phase 2. Rio Bravo further proposes to revise the fuel rate percentages to reflect the modified project design.

16. Rio Bravo estimates that the total cost of the Rio Bravo Pipeline Project, as amended, is approximately $2.435 billion, an increase of approximately $260 million from its original cost estimate.

II. Rio Bravo Amendment Project

A. Procedural Issues: Notice, Interventions, and Comments

17. On June 25, 2020, the Commission issued public notice of Rio Bravo's amendment application, establishing a deadline of July 16, 2020, for filing interventions

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Compressor Station 3, which Rio Bravo now proposes to eliminate. Therefore, the proposed extension of the pipeline system would not impact new landowners or result in new resource impacts beyond those previously analyzed as part of the Authorization Order.

[38] As noted in the Rehearing Order, Rio Bravo is required by the October 2, 2019 Biological Opinion issued by the U.S. Fish and Wildlife Service (FWS) to revise the pipeline route to reduce direct impacts to ocelot habitat. Rehearing Order, 170 FERC ¶ 61,046 at P 32. Specifically, Rio Bravo must re-route the pipelines between milepost (MP) 69.9 to MP 79.2, to avoid 62.6 acres of habitat. Accordingly, Rio Bravo is required to, prior to receiving authorization to commence construction of the pipeline project, submit for Commission approval either a variance request or an amendment, as appropriate, for the route realignment it agreed to with FWS. Rehearing Order, 170 FERC ¶ 61,046 at P 32. Rio Bravo has not yet submitted a variance request or amendment application to address the Biological Opinion.

[39] Although the Authorization Order granted Rio Bravo's proposal to construct and place its pipeline project into service in phases, phased rates were not initially proposed or considered.

and comments. Notice of the application was published in the *Federal Register* on July 1, 2020.[40]

18. John Young; Mary Branch; Maria Galasso; Rio Grande LNG Gas Supply, LLC and Rio Grande; and Sierra Club, Vecinos para el Bienestar de la Comunidad Costera, Shrimpers and Fishermen of the RGV, the Carrizo Comecrudo Tribe of Texas, and Save RGV from LNG (collectively, Sierra Club) filed timely, unopposed motions to intervene.[41]

19. Sierra Club protests the Amendment Project on several grounds: (1) that the Commission lacks jurisdiction to modify the Authorization Order because petitions for review of the Commission's original authorization of the Rio Bravo Pipeline Project, together with the Rio Grande LNG Terminal, are pending before the D.C. Circuit;[42] (2) that Rio Bravo has not justified, nor addressed the environmental impacts of, its requests to increase the diameter of Pipeline 1 and to increase the MAOP of both pipelines;[43] and (3) that the proposed design modifications "set the stage for" future expansions, the impacts of which must also be considered.[44]

20. In response to the notice of application for the Amendment Project, we received numerous comments primarily addressing issues related to the Commission's prior approval of the Rio Grande LNG Terminal and the Rio Bravo Pipeline Project, which are outside the scope of the amendment proceeding.[45] Any comments that relate to the issues pending on remand are addressed below.

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[40] 85 Fed. Reg. 39,554 (July 1, 2020).

[41] Timely, unopposed motions to intervene are granted by operation of Rule 214 of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c)(1) (2022).

[42] Sierra Club July 16, 2020 Protest and Motion to Intervene at 9-10 (Sierra Club Protest). We note that this issue is now moot and, thus, will not be discussed further in this order, as the D.C. Circuit remanded the Authorization Order on August 3, 2021. *See Vecinos*, 6 F.4th 1321.

[43] Sierra Club Protest at 10-12.

[44] *Id.* at 12-13.

[45] For example, numerous commenters expressed general opposition to LNG development. Others questioned the environmental analysis or public interest and need determinations underlying the Commission's prior approval of the projects in Docket Nos. CP16-454-000 and CP16-455-000. *See also* Commission staff December 21, 2020

21. Intervenors John Young, Mary Branch, and Maria Galasso generally take issue with Enbridge's acquisition, through its subsidiary, of the Rio Bravo Pipeline Project from NextDecade.[46] Enbridge's subsidiary Spectra Energy acquired Rio Bravo in March 2020, three months prior to Rio Bravo's filing of its Amendment Project application.[47] The intervenors suggest this change in ownership warrants a full re-examination of the certificate of public convenience and necessity issued for the Rio Bravo Pipeline. We disagree. Here, there was no change to the certificate holder (Rio Bravo), who remains subject to the Commission's jurisdiction and is responsible for all requirements of its certificate. A change to a certificate holder's parent company is not germane to this proceeding nor would it cause us to reevaluate the Commission's previous determination that authorizing the Rio Bravo Pipeline Project was in the public interest.[48] Similarly, the same intervenors note that the Commission authorized the projects in the same order and assert that Rio Bravo's ownership change should compel the Commission to reconsider and separately issue the project authorizations.[49] We find no reason to do so. Though a single order addressed the LNG terminal and associated pipeline system, the two projects were assigned separate, unconsolidated dockets and received separate authorizations under the NGA (a section 7 certificate for the pipeline

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Environmental Assessment (Amendment Project EA) at 5-6 (tbl. 2) (identifying issues and comments outside scope of Amendment Project EA).

[46] *See, e.g.*, Maria Galasso July 16, 2020 Comments; John Young July 10, 2020 Comments; Mary Branch July 9, and July 13, 2020 Comments.

[47] *See supra* note 9; Amendment Application at 6.

[48] *See, e.g.*, *Wyckoff Gas Storage Co. LLC*, 127 FERC ¶ 61,107, at P 10 (2009) (finding, in part, that a company seeking an amendment of its certificate to authorize the transfer of passive ownership interest in certain facilities would not change any of the findings from the certificate order).

[49] *See* Maria Galasso July 16, 2020 Comments; John Young July 10, 2020 Comments; Mary Branch July 9, and July 13, 2020 Comments.

project[50] and a section 3 authorization for the LNG terminal),[51] each subject to a particularized set of mandatory conditions.[52]

22. On July 31, 2020, Rio Bravo submitted an answer responding to Sierra Club's protest and various individuals' comments.[53] Specifically, Rio Bravo provided additional information regarding: (1) the scope of the Amendment Project proceeding, including future expansions; (2) the proposed pipeline modifications in relation to the analysis included in the final EIS, including safety and alternatives analyses; and (3) the Commission's jurisdiction to act on the Amendment Project application. Although the Commission's rules do not permit answers to protests,[54] our rules provide that we may waive this provision for good cause.[55] We will accept Rio Bravo's answer here because it has provided information that assisted us in our decision making. The concerns raised by Sierra Club's protest, Rio Bravo's answer, and all substantive comments concerning the Amendment Project are addressed in Commission staff's December 21, 2020 Environmental Assessment (EA) and, as appropriate, below.

23. Sierra Club requested a trial-type hearing on Rio Bravo's amendment application.[56] Commission practice generally is not to hold an evidentiary, trial-type hearing where, as here, there are no material issues of fact in dispute that cannot be resolved on the basis of the written record.[57] As demonstrated by the discussion in this order, the existing written record is extensive and provides a sufficient basis to resolve the issues and comments in this proceeding. The Commission has satisfied the hearing requirement by giving all interested parties a full and complete opportunity to participate

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[50] John Young commented that FERC should ensure the public and interested parties are aware that the Amendment Project is a modification of the projects' final EIS. This was explained in the Amendment Project EA.

[51] Authorization Order, 169 FERC ¶ 61,131 at ordering paras. (A), (C).

[52] *Id.* at app. (Environmental Conditions).

[53] Rio Bravo July 31, 2020 Answer (Rio Bravo Answer).

[54] 18 C.F.R. § 385.213(a)(2) (2022).

[55] 18 C.F.R. § 385.101(e) (2022).

[56] *See* Sierra Club July 16, 2020 Protest and Motion to Intervene at 13.

[57] *See, e.g.*, *S. Union Gas Co. v. FERC*, 840 F.2d 964, 970 (D.C. Cir. 1988); *Dominion Transmission, Inc.*, 141 FERC ¶ 61,183, at P 15 (2012).

through evidentiary submission in written form.[58] We therefore decline to grant the request for a trial-type hearing.

B. Pipeline Amendment Project Discussion

24. Because the pipeline facilities will be used to transport natural gas in interstate commerce subject to the jurisdiction of the Commission, and relocating the approved facilities requires amending the certificate issued in the Authorization Order, Rio Bravo's request is subject to the requirements of subsections (c) and (e) of section 7 of the NGA.[59]

1. Certificate Policy Statement

25. The 1999 Certificate Policy Statement provides guidance for evaluating proposals to certificate new construction.[60] The 1999 Certificate Policy Statement establishes criteria for determining whether there is a need for a proposed project and whether the proposed project will serve the public interest. It explains that, in deciding whether to authorize the construction of new pipeline facilities, the Commission balances the public benefits against the potential adverse consequences. The Commission's goal is to appropriately consider the enhancement of competitive transportation alternatives, the possibility of overbuilding, subsidization by existing customers, the applicant's responsibility for unsubscribed capacity, the avoidance of unnecessary disruptions of the environment, and the unneeded exercise of eminent domain in evaluating new pipeline construction.

26. Under this policy, the threshold requirement for applicants proposing new projects is that the applicant must be prepared to financially support the project without relying on subsidization from its existing customers. The next step is to determine whether the applicant has made efforts to eliminate or minimize any adverse effects the project might have on the applicant's existing customers, existing pipelines in the market and their captive customers, and landowners and communities affected by the route of the new pipeline facilities. If residual adverse effects on these interest groups are identified after

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[58] *See Moreau v. FERC*, 982 F.2d 556, 568 (D.C. Cir. 1993).

[59] 15 U.S.C. § 717f(c), (e).

[60] *Certification of New Interstate Nat. Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *clarified*, 90 FERC ¶ 61,128, *further clarified*, 92 FERC ¶ 61,094 (2000) (1999 Certificate Policy Statement). On March 24, 2022, the Commission issued an order converting the policy statements issued in February 2022 to draft policy statements. *See Certification of New Interstate Nat. Gas Facilities*, 178 FERC ¶ 61,197 (2022) (Order on Draft Policy Statements).

efforts have been made to minimize them, the Commission will evaluate the project by balancing the evidence of public benefits to be achieved against the residual adverse effects. This is essentially an economic test. Only when the benefits outweigh the adverse effects on economic interests will the Commission proceed to complete the environmental analysis where other interests are considered.

27. In the Authorization Order, the Commission applied the Certificate Policy Statement and found that the Rio Bravo Pipeline Project was required by the public convenience and necessity.[61] Because Rio Bravo had no existing customers, the Commission found that there was no potential for subsidization by existing customers, or degradation of service to existing customers, as a result of the project.[62] The proposed Amendment Project does not alter this finding.

28. The Amendment Project proposes facility modifications that will improve the hydraulic efficiency of the Rio Bravo Pipeline Project. The modified project design will provide Rio Bravo additional flexibility in meeting the needs of its shipper, Rio Grande LNG Gas Supply LLC (formerly RioGas Marketing, LLC), for supplying natural gas to the Rio Grande LNG Terminal. No other pipelines, or their captive customers, have filed adverse comments regarding Rio Bravo's proposal to amend the Rio Bravo Pipeline Project. Thus, we find that Rio Bravo's proposed amendment will not adversely affect its other pipelines and their captive customers.

29. We are satisfied that Rio Bravo has taken appropriate steps to minimize adverse impacts on landowners affected by the Amendment Project. The Amendment Project proposes to eliminate from the project's original design two compressor stations and two booster stations. By decreasing the project's aboveground footprint, the project modifications proposed here further reduce impacts to landowners and surrounding communities.

30. Accordingly, we find that with the proposed amendment Rio Bravo will not have adverse economic impacts on existing shippers or other pipelines and their existing customers, and that the project's benefits will continue to outweigh any adverse economic effects on landowners and surrounding communities. Therefore, we conclude

[61] Authorization Order, 169 FERC ¶ 61,131 at P 32.

[62] *Id.* P 29.

that the Amendment Project is consistent with the criteria set forth in the Certificate Policy Statement and analyze the environmental impacts of the proposal below.[63]

2. Rates

a. Initial Recourse Rates

31. In the Authorization Order, the Commission approved Rio Bravo's proposed initial maximum monthly reservation charge of $6.2927 per Dth for firm transportation service under Rate Schedule FTS and a usage charge of $0.2069 per Dth for interruptible transportation service and parking and loan service under Rate Schedules ITS and PALS, respectively.[64] Due to the increased costs from the Amendment Project, Rio Bravo proposes to revise its initial rates and establish separate initial Phase 1 and Phase 2 recourse reservation and usage charges for firm service under Rate Schedule FTS, interruptible service under Rate Schedule ITS, and park and loan service under Rate Schedule PALS. Rio Bravo states that its revised rates are designed on the same basis as the rates the Commission approved in the Authorization Order,[65] including a capital structure of 50% debt and 50% equity, a cost of debt of 6.85%, a return on equity of 14%, and a depreciation rate of 2.50%.[66]

32. Subsequently, in its August 20, 2020 response to a staff data request, Rio Bravo provided a revised cost of service and recalculated its proposed initial recourse rates for the Rio Bravo Pipeline Project, as amended, to correct its accumulated deferred income taxes calculation.[67] We use those revised cost of service and rates for the purposes of establishing the initial recourse rates below.

33. For Phase 1, Rio Bravo proposes a monthly reservation charge of $7.4290 per Dth and a usage charge of $0.0026 per Dth for service under Rate Schedule FTS. For service under Rate Schedules ITS and PALS, Rio Bravo proposes a rate of $0.2468 per Dth

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[63] *See* Certificate Policy Statement, 88 FERC at 61,745-46 (explaining that only when the project benefits outweigh the adverse effects on the economic interests will the Commission then complete the environmental analysis).

[64] Authorization Order, 169 FERC ¶ 61,131 at P 38. The Authorization Order accepted the initial rates subject to Rio Bravo recalculating its initial recourse rates in its compliance filing consistent with a straight-fixed variable rate design.

[65] Amendment Application at 17.

[66] *Id.* Ex. P at 9.

[67] Rio Bravo August 20, 2020 Data Response.

based on a 100% load factor equivalent of the Rate Schedule FTS rate.[68] The Phase 1 rates are based on a cost of service of approximately $240 million and a design capacity of 32,313,600 Dth.[69]

34. For Phase 2, which includes the cost of the Phase 1 facilities, Rio Bravo proposes a monthly reservation charge of $7.5051 per Dth and a usage charge of $0.0021 per Dth for service under Rate Schedule FTS. For service under Rate Schedules ITS and PALS, Rio Bravo proposes a rate of $0.2489 per Dth based on a 100% load factor equivalent of the Rate Schedule FTS rate. The Phase 2 rates are based on a cost of service of approximately $413 million and a design capacity of 55,080,000 Dth.[70] Once the Phase 2 facilities are placed in service, Rio Bravo's Phase 2 rates would become effective, and its Phase 1 rates would no longer apply.

35. We have reviewed Rio Bravo's proposed revised cost of service and initial rates and find that they are consistent with current Commission policy.

b. Fuel and Electric Power Cost Charge

36. In the Authorization Order, the Commission approved Rio Bravo's proposed initial fuel retainage percentage of 3.00%.[71] For Phase 1, Rio Bravo proposes to revise its initial system fuel retainage percentage to 1.11%, which reflects a lower estimated initial fuel retainage in light of the Amendment Project's proposed design modifications. Following the in-service date of the Phase 2 facilities, Rio Bravo proposes a system fuel retainage percentage of 0.88%, which reflects the addition of two electric-driven compressor units for the additional 1.9 Bcf/d of capacity in Phase 2.

37. Rio Bravo states it has revised section 23 of the General Terms and Conditions (GT&C) of its tariff to include an incremental Electric Power Cost (EPC) charge to recover costs associated with the two electric-driven compressor units, including reservation and usage charges for applicable services. Rio Bravo proposes an annual true-up mechanism to determine the EPC adjustment to the reservation and usage charges, and to reconcile the EPC charge against the electric power costs incurred by Rio Bravo, as further detailed in GT&C section 23. Effective as of the Phase 2 in-service date, Rio Bravo proposes a maximum EPC reservation charge of $0.2284 per Dth and a maximum EPC usage charge of $0.0072 per Dth for Rate Schedule FTS and a maximum

[68] *Id.* Ex. P at 1.

[69] *Id.*

[70] *Id.*

[71] Authorization Order, 169 FERC ¶ 61,131 at P 39.

EPC usage charge of $0.0147 per Dth for Rate Schedules ITS and PALS. Rio Bravo also proposes a minimum EPC charge of $0.0072 per Dth for Rate Schedules FTS, ITS, and PALS.[72]

38. We accept Rio Bravo's revised initial system fuel retainage percentage and initial incremental EPC surcharges. In addition, while the Authorization Order directed Rio Bravo to file actual tariff records not less than 60 days prior to the commencement of interstate service, we revise that requirement and require Rio Bravo to file actual tariff records at least 30 days but not more than 60 days prior to the commencement of interstate service.

c. Tariff

39. As part of its Amendment Project application, Rio Bravo filed revisions to its *pro forma* open-access tariff applicable to services provided on its proposed pipeline. Rio Bravo proposes revisions to reflect its initial recourse rates for Phase 1 and 2. Rio Bravo also proposes to establish initial EPC charges that will apply upon the in-service date of Phase 2 and an EPC charge tracker and true-up mechanism. We approve the revised *pro forma* tariff as consistent with Commission policies.

d. Three Year Filing Requirement

40. As required by the Authorization Order,[73] Rio Bravo must file a cost and revenue study no later than three months after its first three years of actual operations of the full project facilities (i.e., Phase 1 and Phase 2 facilities) to justify its existing cost-based firm and interruptible recourse rates.[74] If, after two years from the in-service date of Phase 1, Rio Bravo has not begun construction of the Phase 2 facilities, Rio Bravo is directed to file the cost and revenue study three months after the first three years of actual operations of the Phase 1 facilities. Under either scenario, in that filing the projected units of service should be no lower than those upon which Rio Bravo's approved initial rates are based. The filing must include a cost and revenue study in the form specified in section 154.313 of the Commission's regulations to update cost of service data.[75] Rio Bravo's cost and revenue study should be filed through the eTariff portal using a Type of Filing Code 580.

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[72] Amendment Application, Ex. P at 1.

[73] Authorization Order, 169 FERC ¶ 61,131 at P 41.

[74] *Fla. Se. Connection, LLC*, 154 FERC ¶ 61,080, at P 139 (2016); *Bison Pipeline, LLC,* 131 FERC ¶ 61,013, at P 29 (2010); *Ruby Pipeline, L.L.C.*, 128 FERC ¶ 61,224, at P 57 (2009); *MarkWest Pioneer, L.L.C.*, 125 FERC ¶ 61,165, at P 34 (2008).

[75] 18 C.F.R. § 154.313 (2022).

In addition, Rio Bravo is advised to include as part of the eFiling description a reference to Docket Nos. CP16-455-000 and CP20-481-000 and the cost and revenue study.[76] After reviewing the data, the Commission will determine whether to exercise its authority under NGA section 5 to investigate whether the rates remain just and reasonable. In the alternative, in lieu of that filing, Rio Bravo may make an NGA general section 4 rate filing to propose alternative rates to be effective no later than three years after the in-service date for its proposed facilities.

3. Environmental Analysis

41. On July 27, 2020, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Rio Bravo Pipeline Project Amendment, and Request for Comments on Environmental Issues* (NOI). The NOI was published in the *Federal Register*[77] and mailed to interested parties, including federal, state, and local officials; agency representatives; environmental and public interest groups; Native American tribes; local libraries and newspapers; and affected property owners. We received approximately 960 comment letters in response to the Notice of Application and during the scoping period from interested individuals and affected landowners; the City of South Padre Island; Texas Parks and Wildlife Department; U.S. Fish and Wildlife Service (FWS); U.S. Environmental Protection Agency, Region 6; Texas State Historic Preservation Office; as well as non-governmental groups including Sierra Club, Vecinos para el Bienestar de la Comunidad Costera, Shrimpers and Fishermen of the RGV, Carrizo Comecrudo Tribe of Texas, Save RGV (formerly Save RGV from LNG), Frontera Audubon Society, and Defenders of Wildlife.

42. The primary issues raised during scoping included safety-related impacts from a larger diameter pipeline and increased pipeline pressure; wetland and wildlife impacts along the pipeline route; impact on Tribal lands; socioeconomic impacts; air quality impacts, greenhouse gas emissions and climate change; and systems alternatives. Several commenters asked the Commission to hold public meetings to engage the public on the scope of the pipeline project and allow residents to express their concern and comment about the Rio Bravo Pipeline Project.[78] Public scoping meetings were not held given the limited scope of the Amendment Project. The interested members of the public and local non-governmental groups provided comments in response to the Notice of Application

[76] *Electr. Tariff Filings*, 130 FERC ¶ 61,047, at P 17 (2010).

[77] 85 Fed. Reg. 46,616 (Aug. 3, 2020).

[78] *See, e.g.*, Rebekah Hinojosa August 27, 2020 Comment; Molly Smith August 27, 2020 Comment; Jim Chapman August 2, 2020 Comment.

and the NOI that largely related to the previously authorized projects.[79] The Environmental Assessment (EA) prepared for the Amendment Project and issued on December 21, 2020, correctly explained that the scope of Amendment Project is limited to the proposed modifications to the Rio Bravo Pipeline Project, the environmental impacts related to the already authorized projects are outside the scope of the environmental analysis for the proposed amendment.[80]

43. The U.S. Army Corps of Engineers (Army Corps) participated as a cooperating agency in preparation of the EA because the project requires issuance of a dredge and fill permit from the Corps under section 404 of the Clean Water Act (CWA). The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) also participated as a cooperating agency due to its pipeline safety and design requirement expertise. The analysis in the EA addresses geology, soils, water resources, wetlands, vegetation, fisheries, wildlife, threatened and endangered species, land use, recreation, visual resources, cultural resources, air quality, noise, safety, socioeconomics, cumulative impacts, and alternatives. All substantive comments raised during the scoping process and applicable to the Amendment Project were addressed in the EA.

44. The EA was issued for a 30-day comment period and placed into the public record on December 21, 2020. In response to the EA, we received nearly 400 comments

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[79] *See supra* note 2.

[80] The environmental impacts of the already authorized projects were evaluated in the final EIS issued on April 26, 2019. The Commission will not consider arguments that relitigate the Authorization Order, including whether the Commission properly found the Rio Bravo Pipeline Project to be in the public convenience and necessity, except to the extent such arguments are within the scope of the remand proceeding. Concerns within the scope of the remand proceeding, including project impacts on environmental justice communities, are addressed below in Section III: *Vecinos* Remand Proceeding. Further, in addressing the Amendment Project, we will not consider arguments about whether the Commission properly analyzed the environmental impacts associated with the previously approved projects. Such excluded arguments raised by commenters include: wetland and upland vegetation loss; cumulative impacts of the projects; social cost, economic cost, environment, climate change impacts associated with LNG exports; impacts on ecotourism (fishing and birding) near the authorized Rio Grande LNG Terminal; visual resource, construction-related air quality, light, and noise impacts along the Rio Bravo Pipeline Project; environmental and health impacts on the shrimping and fishing industries at the end of the projects; environmental impacts of additional gas production facilitated by the pipeline and LNG facilities; and concerns related to SpaceX facility near the Rio Grande LNG Terminal. These are improper collateral attacks on the Authorization Order and need not be considered further.

primarily addressing issues related to our prior approval of the projects, which are outside the scope of the amendment proceeding. We also received comments on the EA from seven individuals,[81] Sierra Club, and Healthy Gulf, raising environmental and procedural concerns associated with the Amendment Project. In addition, Rio Bravo filed clarifying comments on the EA,[82] and responded to the public comments.[83]

4. General NEPA Issues

a. NEPA Regulations Followed

45. Sierra Club contends that the EA fails to identify whether the environmental analysis was conducted according to the CEQ's 2020 amended NEPA regulations.[84] Because Rio Bravo filed its Amendment Project application before CEQ's regulations took effect on September 14, 2020, coupled with the fact that staff commenced its environmental review under NEPA before the effective date of CEQ's new regulations, staff followed the 1978 CEQ regulations[85] and the Commission's regulations implementing NEPA.[86]

b. Insufficient Comment Period and Request for Public Comment Sessions

46. Maria Galasso, John Young, and other commenters requested that the comment period on the EA be extended, particularly in light of the comment period's concurrent timing with certain federal holidays and the presidential inauguration, as well as the COVID pandemic. Several commenters also assert that the Commission should have

[81] Mary Branch filed three separate comments on January 20, 2021. Hereinafter, they are referred to as Mary Branch EA Comments 1, Mary Branch EA Comments 2, and Mary Branch EA Comments 3.

[82] Rio Bravo January 21, 2021 EA Comments.

[83] Rio Bravo February 4, 2021 Response to EA Comments; Rio Bravo April 27, 2021 Response to Request for Supplemental EA/EIS (Rio Bravo April 27 Comments).

[84] Sierra Club January 21, 2021 EA Comments at 1 (Sierra Club EA Comments).

[85] Accordingly, when referencing CEQ's regulations, this order includes citations to CEQ's regulations as they existed before CEQ's new regulations took effect.

[86] 18 C.F.R. pt. 380 (2022).

held public comment sessions to further enable impacted communities and landowners to comment on the Amendment Project.[87]

47. The EA was issued with a 30-day comment period. Nevertheless, as is our practice, we address all comments received on the EA, including late-filed comments, that raise issues within the scope of this proceeding.

c. Scope of Environmental Review

i. Request for Full or Supplemental EIS

48. Sierra Club and other commenters contend that the Commission is required to prepare an EIS, rather than an EA, for the Amendment Project.[88] Instead of assessing whether the incremental impact of Rio Bravo's proposed amendment will be significant, Sierra Club asserts that the scope of the Amendment Project's environmental review should address the impacts of the Rio Bravo Pipeline Project as a whole.[89] Sierra Club suggests that the Amendment Project constitutes significant new information and that the Commission must reexamine and supplement the final EIS.[90] Sierra Club states that it disagrees with the final EIS's conclusions regarding the Rio Bravo Pipeline Project's impact on wetlands and points to the suspension of the projects' "section 404/10 permit," a permit issued by the Army Corps pursuant to section 404 of the CWA and section 10 of the Rivers and Harbors Act (Corps permit).[91] Sierra Club notes that a modified permit may require further mitigation of the wetland impacts associated with the Rio Bravo Pipeline Project.

49. The final EIS fully analyzed the environmental impacts of the Rio Grande LNG Terminal and the original Rio Bravo Pipeline Project. As noted above, the EA correctly explained that the scope of Amendment Project is limited to the proposed modifications

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[87] *See, e.g.*, Healthy Gulf January 21, 2021 Comments at 3, 5 (Healthy Gulf EA Comments); January 21, 2021 Comments submitted on behalf of 293 individuals. Many of the form letters submitted between January 21 and February 24, 2021 included similar requests.

[88] *See* Sierra Club EA Comments at 2.

[89] *Id.*

[90] *Id.*

[91] *See* Sierra Club EA Comments at 2; *see also* Commission Staff November 5, 2020 Memorandum (appending Army Corps' August 6, 2020 Notice of Suspension of the Army Permit SWG-2015-00114).

to the Rio Bravo Pipeline Project.[92] Because the Commission already considered the impacts of the project as a whole in issuing the Authorization Order, it was appropriate for staff to limit the analysis in the EA to only those aspects of the Rio Bravo Pipeline Project that would be changed by the Amendment Project.

50. As to wetland impacts, the EA explained that the Amendment Project would not permanently affect any additional wetlands, beyond the impacts described in the final EIS.[93] Nevertheless, as detailed in the EA, the proposed diameter increase of Pipeline 1 could result in additional temporary impacts of the wetlands crossed by the project due to the increased trench depth.[94] Rio Bravo and Rio Grande filed with the Army Corps a request to suspend the projects' section 404 permit, followed by a subsequent request for a permit modification to account for, among other things, the reduction of wetlands impacts within the Rio Grande LNG Terminal that would result from the elimination of Compressor Station 3.[95] As stated in both the Authorization Order and the EA, Rio Bravo will not be permitted to begin construction until it has obtained all necessary federal permits, including a valid section 404 permit.[96] In fact, on September 22, 2021, Rio Bravo received its updated Army Corps section 404 permit;[97] thus, the requirements under the CWA have been satisfied for the terminal, pipeline, and amendment.[98] Rio Bravo must comply with any additional mitigation or stipulations imposed by this or any future modified section 404 permit issued by the Army Corps. Accordingly, the EA concluded, and we agree, that any additional impacts on wetlands resulting from the Amendment Project would not be significant.[99]

51. Section 102(2)(C) of NEPA requires federal agencies to prepare a detailed statement for "major federal actions significantly affecting the quality of the human

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[92] Amendment Project EA at 2-3.

[93] *Id.* at 14.

[94] *Id.*

[95] *Id.*

[96] *Id.* at 15.

[97] *See* Rio Grande September 27, 2021 Filing.

[98] *See* Rio Bravo June 1, 2022 Filing at Attachment 2-1.

[99] *Id.*

environment."[100] Here, the EA analyzed the Amendment Project's environmental effects and concluded that they would not be significant.[101] Sierra Club has provided no substantial evidence to the contrary. Thus, preparation of an EIS is not required.[102]

ii. Future Expansion of LNG Terminal

52. Sierra Club asserts that the Commission must address potential future expansions at the Rio Grande LNG Terminal, including the addition of a sixth liquefaction train.[103] To support this claim, Sierra Club states that Rio Grande has discussed this possibility in corporate presentations and filings to the U.S. Securities and Exchange Commission.[104] Sierra Club argues that the Commission cannot authorize the Amendment Project without first addressing how Rio Grande and Rio Bravo will supply feed gas for a hypothetical sixth liquefaction train.[105]

53. As an initial matter, Sierra Club's assertions regarding a hypothetical future expansion of the Rio Grande LNG Terminal are outside the scope of this proceeding, which is limited to the proposed design modifications to the authorized, but unconstructed, Rio Bravo Pipeline Project. In any event, Rio Grande has not proposed to produce more than the authorized 27 million metric tons of LNG per year, the amount authorized for export by the U.S. Department of Energy's Office of Fossil Energy (DOE). The Commission has explained, and Rio Grande has acknowledged, that any expansion of export capacity at the Rio Grande LNG Terminal would require Rio Grande to seek and receive additional authorization from DOE, the Commission, and other applicable federal and state agencies.[106] Any incremental environmental impacts related to a future request for authorization to expand the LNG terminal's export capacity would be

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[100] 42 U.S.C. § 4332(2)(C).

[101] Amendment Project EA at 50.

[102] *See* 18 C.F.R. § 380.6 (2022) (describing actions that normally require preparation of an EIS).

[103] Sierra Club EA Comments at 3.

[104] *Id.*

[105] *Id.*

[106] Rehearing Order, 170 FERC ¶ 61,046 at P 27.

analyzed at that time.[107] Because no such request is proposed, nothing further is required here.[108]

5. Aquatic Resources

54. Molly Smith takes issue with the EA's conclusion that the Amendment Project's proposal to increase the diameter of Pipeline 1, requiring an eight-foot-deep ditch rather than a seven-foot ditch, would not change the impacts on soil, groundwater, and wetlands.[109] In particular, Ms. Smith asserts that the EA erred in concluding that aquatic resources would not be impacted by the proposed deeper trench.

55. As indicated in the EA, the final EIS described the existing aquatic resources, as well as the impacts and mitigation of the Rio Bravo pipeline system.[110] The Amendment Project does not impact any waterbodies not previously considered in final EIS.[111] Therefore, the EA concluded, and we agree, that Rio Bravo's proposed amendment would not impact aquatic resources.[112] To the extent there are any additional impacts to aquatic resources as a result of the one-foot deeper trench, they are expected to be minor and would be mitigated by Rio Bravo's implementation of the measures in its 404 permit and 401 water quality certification. Moreover, the mitigation measures for resource impacts, including soils and groundwater, identified in the final EIS[113] and subsequently adopted as required conditions of the Commission's authorization for these projects, would apply to the Amendment Project. We find that these mitigation measures will

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[107] *Id.* (collecting examples where additional environmental analysis preceded Commission action authorizing increased LNG production capacity).

[108] NEPA "does not require agencies to commence NEPA reviews of projects not actually proposed." *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1318 (D.C. Cir. 2014) (citation omitted); *see also Weinberger v. Catholic Action of Haw.*, 454 U.S. 139, 146 (1981) ("an EIS need not be prepared simply because a project is *contemplated*, but only when the project is *proposed*") (emphasis in the original).

[109] Molly Smith January 20, 2021 Comments.

[110] Amendment Project EA at 15; *see also* Final EIS at § 4.6.2.

[111] Amendment Project EA at 15.

[112] *Id.*

[113] *Id.* Mitigation measures include crossing all waterbodies with perceptible flow between November 1 and January 31, unless further approval by Texas Parks and Wildlife Department. Final EIS at 4-118.

ensure that the aquatic, soils, and groundwater resources impacted by the Rio Bravo Pipeline Project will be adequately protected.

6. Threatened and Endangered Species

56. Various commenters, pointing to the FWS's November 9, 2020 listing of the eastern black rail as federally threatened, requested that the Amendment Project's impacts on this species be disclosed and suggested that further consultation with the FWS was needed.[114]

57. The final EIS for the projects discussed the eastern black rail, which at the time was proposed for listing as threatened, and provided a detailed analysis of the project's effects on this species.[115] By letter filed January 26, 2021, the FWS concurred with Commission staff's determination that the projects *may affect but are not likely to adversely affect* the eastern black rail.[116] Given the Amendment Project would not result in additional ground-disturbing activities, vegetation removal, or otherwise impact listed species or their habitats beyond what was described for the Rio Bravo Pipeline Project, Commission staff determined there would be *no effect* on the eastern black rail as a result of the implementation of the Amendment Project.[117] Moreover, by letter filed August 24, 2020, the FWS determined that no amendment to the October 1, 2019 Biological Opinion for the Rio Bravo Pipeline Project was required based on the proposed Amendment Project.[118] This completes our consultation requirements for federally listed species under the Endangered Species Act.

7. Pipeline Safety

58. Molly Smith comments that the EA did not adequately address the pipeline's proximity to human activity, stating that the pipeline will pass under the heavily trafficked Highway 48 in the vicinity of Zapata Memorial Boat Ramp, a popular fishing

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[114] *See, e.g.*, John Young January 21, 2021 Comments at 6; Mary Branch EA Comments 2; Save RGV January 20, 2021 Comments at 2.

[115] *See* Final EIS at 4-143 to 4-145.

[116] FWS, Comments, Docket Nos. CP16-454-000 and CP16-455-000 (filed Jan. 26, 2021).

[117] *See* Amendment Project EA at 16-17.

[118] FWS August 24, 2020 Comments at 2.

area.[119] Ms. Smith also states that the EA failed to consider the increased corrosive nature of saltwater compared to freshwater.

59. The EA appropriately examined the safety implications of the Amendment Project and thoroughly described the federal regulatory program that oversees pipeline safety and design.[120] As noted above, PHMSA participated as a cooperating agency in the preparation of the EA for the Amendment Project due to the agency's pipeline safety and design expertise. PHMSA administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline,[121] including pipelines that traverse coastal, salt marsh, and other more caustic regions and those within the vicinity of populated areas. As further described in the EA, PHMSA defines area classifications based on population density in the vicinity of the pipeline; class locations that represent more populated areas require higher safety factors in pipeline design, testing, and operation.[122] Rio Bravo completed additional analysis for the Amendment Project, which confirmed that the entire pipeline system would be located within Class 1 locations,[123] the least populated area classification. Pipelines 1 and 2 would be designed for an MAOP of 1,825 psig and tested to a minimum of 2,293 psig for Class 1 locations.[124] If the Class 1 designation changes, Rio Bravo would test the pipelines to ensure they conform to the higher pressure standards required for any Class 2 and 3 locations along the route.[125] Thus, we find that the EA adequately addressed these concerns.

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[119] Molly Smith January 20, 2021 Comments.

[120] *See* Amendment Project EA at 31-41.

[121] *Id.* at 31.

[122] *Id.* at 33-34.

[123] PHMSA defines Class 1 as a location with 10 or fewer building intended for human occupancy. *Id.* at 33.

[124] *Id.* at 34.

[125] *Id.* In more populated areas, block valve location, pipe wall thickness and pipeline design pressures, hydrostatic test pressures, MAOP, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must conform to higher standards. *Id.*

8. GHG Emissions

60. The EA analyzed potential GHG emissions attributable due to the Amendment Project. With respect to GHG emissions from the construction associated with the Amendment Project, the EA concluded that the increase in the diameter of pipeline 1 would not result in additional construction emissions beyond the emission detailed in final EIS.[126] Construction emissions for the modified Compressor Station 1 are estimated to remain unchanged from the estimates presented in the final EIS, while construction emissions associated with Compressor Stations 2 and 3 and Booster Stations 1 and 2 would be avoided as the Amendment Project would eliminate these facilities.[127]

61. With respect to the operational emissions associated with pipelines,[128] the EA noted that although the Amendment Project would slightly increase the length of the pipelines,[129] the emissions estimate from pipeline operation would remain the same as detailed in the final EIS.[130] The originally estimated operational GHG emissions attributable to Compressor Stations 2 and 3 (761,764 and 552 tpy of carbon dioxide equivalents [CO_2e], respectively)[131] would be avoided because those stations would not be built. The GHG emissions associated with operation of the modified Compressor Station 1[132] are marginally less than the GHG emissions reported for the station as

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[126] Amendment Project EA at 25.

[127] *Id.*

[128] Fugitive emissions in the form of minor leaks from flanges, valves, and connectors could occur along the length of the pipeline route during operation.

[129] The 0.2-mile-extension of each pipeline from 135.5 miles to 135.7 miles represents a 0.15% increase in length. This proportional increase is well within the margin of error for the construction emissions presented in the EA. Additionally, Compressor Stations 2 and 3, Booster Stations 1 and 2, and associated meter stations, authorized in the Authorization Order, are eliminated as part of the Amendment Project; therefore, emissions estimated in the final EIS to result from construction of these facilities will no longer occur.

[130] Amendment Project EA at 26.

[131] *See* Final EIS at 4-275, tbl. 4.11.1-16 (table of emissions from Compressor Station 2) and 4-263, tbl. 4.11.1-7 (table of emissions from Compressor Station 3).

[132] Compressor Station 1 as originally authorized would have contained six 30,000-hp natural gas-driven turbines, two natural gas-fired backup generators, and other ancillary facilities. The modified Compressor Station 1 proposed in the Amendment Project would consist of four 43,000-hp natural gas-driven turbines,

originally authorized.[133] Overall, there would be a net reduction in the GHG emissions associated with the Rio Bravo Pipeline Project as a result of the Amendment Project, which reduction is attributable to the elimination of Compressor Stations 2 and 3, where the emissions associated with the construction and operation of the facilities being modified by the Amendment Project, i.e., Pipeline 1 and Compressor Station 1, remain the same.[134]

9. Cumulative Impacts

62. Healthy Gulf takes issue with the scope of the Amendment Project EA's cumulative impacts analysis, stating that the EA should address the impacts from both the Rio Bravo Pipeline Project and the Rio Grande LNG Terminal.[135] Specifically, Healthy Gulf asserts that the cumulative impacts analysis for the Amendment Project did not include emissions from modified Compressor Station 1.[136] Healthy Gulf also suggests that the Commission must complete a programmatic EIS "to take into account the cumulative effects of all fossil gas, fossil fuel and petrochemical facilities in operation and in planning, that will affect the communities and the environment" of the region in which the Amendment Project is proposed.[137]

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two 55,000-hp electric motor-driven compressor units, one natural gas-driven fuel heater, and two natural gas-fired backup generators, and other ancillary facilities. The station as modified would have approximately the same amount of horsepower from natural-gas driven compressor units. Electric motor-driven compressors would not have any associated emissions and, thus, are not a source of GHG emissions.

[133] Amendment Project EA at 27, tbl. 5 (reporting 760,402 tons per year of CO_2e) as compared to Final EIS at 4-275, tbl. 4.11.1-16 (reporting 761,764 tons per year of CO_2e).

[134] The EA at page 46 states that: "construction and operation of the Project Amendment [facilities] would increase the atmospheric concentration of GHGs." That statement addressed the potential climate impacts from the GHG emissions associated with the construction and operation of the relevant pipeline segments and Compressor Station 1 on a stand-alone basis. It did not consider the net effect on GHG emissions of the Amendment Project as compared to the authorized project (i.e., the fact that the Amendment Project eliminated emitting facilities).

[135] *See* Healthy Gulf EA Comments at 1-3.

[136] *Id.* at 2.

[137] *Id.* at 1.

63. The scope of the cumulative impacts analysis is focused on the air quality impacts of the Amendment Project when added to other past, present, and reasonably foreseeable future actions,[138] and the EA's cumulative impacts analysis did consider the proposed modifications to Compressor Station 1. The EA assessed the air emissions associated with both construction and operation of modified Compressor Station 1 in combination with any past, present, and reasonably foreseeable future projects in the geographic scope of emissions for modified Compressor Station 1.[139] The EA concluded that only one known project—the City of Alice's trench burner project—could be constructed concurrently with modified Compressor Station 1, but given the intermittent and short-term nature of construction, that project would have a minor cumulative air emissions impact when considered with proposed modified Compressor Station 1.[140] As to operational emissions, the EA determined that although concurrent operation of modified Compressor Station 1 and the other projects identified in the geographic scope could result in a cumulative increase in combustion and fugitive emissions, concurrent operations are not expected to result in an exceedance of the National Ambient Air Quality Standards (NAAQS) for those emissions.[141]

64. Contrary to Healthy Gulf's assertion, the Commission is not required to complete a programmatic EIS "to take into account the cumulative effects of all fossil gas, fossil fuel and petrochemical facilities in operation and in planning, that will affect the communities and the environment" in the vicinity of the Amendment Project.[142] As the Supreme Court held in *Kleppe v. Sierra Club*,[143] a programmatic EIS is not required to evaluate the regional development of a resource by private industry if the development is

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[138] *See id.*; Amendment Project EA at 42 (explaining that cumulative impacts related to resource areas other than air quality were not evaluated due to there being no additional impacts—or, in many cases, fewer impacts—associated with the Amendment Project when compared to the impacts analyzed in the final EIS).

[139] *See* Amendment Project EA at 42-44. The EA applied a resource-specific geographic boundary for air quality of 0.5 mile of the proposed modified Compressor Station 1 for construction-related cumulative impacts and within 31 miles (or 50 kilometers) of the modified station for operation-related cumulative impacts. *Id.* at 42.

[140] *Id.* at 44.

[141] *Id.*

[142] Healthy Gulf EA Comments at 1.

[143] 427 U.S. 390 (1976).

not part of, or responsive to, a federal plan or program in that region.[144] We have explained that there is no Commission plan, policy, or program for the development of natural gas infrastructure.[145] Rather, the Commission acts on individual applications filed by entities proposing to construct interstate natural gas pipelines.[146] While the Commission's practice is to consider each natural gas infrastructure project application on its own merits, we may, however, choose to prepare a multi-project environmental document regarding projects that are closely related in time or geography, where that is the most efficient way to review project proposals,[147] and the Commission's NEPA documents do consider the cumulative impacts of other jurisdictional and non-jurisdictional projects in the same geographic and temporal scope as the proposal under consideration. The final EIS for the projects included a comprehensive cumulative impacts assessment of all past, present, and reasonably foreseeable actions in the area of the projects.[148]

65. In the Amendment Project EA, Commission staff determined that Rio Bravo's proposal would not result in additional resource impacts beyond what was described in the final EIS for the underlying authorization, with the exception of air quality impacts due to modified Compressor Station 1.[149] Therefore, the Amendment Project EA's cumulative impacts analysis was appropriately limited in scope to cumulative impacts on local and/or regional air quality.[150] Additionally, we find that we do not need to do a programmatic EIS.

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[144] *Id.* at 401-02.

[145] *See, e.g., Tex. E. Transmission, LP*, 149 FERC ¶ 61,259, at PP 38-47 (2014); *Dominion Transmission, Inc.*, 152 FERC ¶ 61,138, at P 30 (2015).

[146] *E.g.*, *Atl. Coast Pipeline, LLC*, 161 FERC ¶ 61,042, at P 281 (2017).

[147] *See* 40 C.F.R. § 1508.25 (2022); *see also*, *e.g.*, EA for the Monroe to Cornwell Project and the Utica Access Project, Docket Nos. CP15-7-000 & CP15-87-000 (issued Aug. 19, 2015); Final Multi-Project Environmental Impact Statement for Hydropower Licenses: Susquehanna River Hydroelectric Projects, Project Nos. 1888-030, 2355-018, and 405-106 (issued Mar. 11, 2015).

[148] Final EIS at 4-392 to 4-495.

[149] *See* Amendment Project EA at 41.

[150] *See id.* at 41-44.

10. Alternatives

66. In its comments on the EA, Sierra Club asserts that the Commission must consider as a viable alternative the possibility that some of the natural gas needed at the Rio Grande LNG Terminal could be supplied by the Valley Crossing Pipeline, an existing intrastate pipeline owned by Valley Crossing Pipeline, LLC, an Enbridge affiliate.[151] Sierra Club also faults the EA for not discussing a higher capacity single pipeline alternative in combination with available capacity on the Valley Crossing Pipeline.[152] Specifically, Sierra Club claims that some combination of increasing the throughput of a single 48-inch-diameter pipeline (beyond the Amendment Project's proposed 2.6 Bcf/d capacity for Pipeline 1) and supplemental gas deliveries from the Valley Crossing Pipeline could provide the necessary feed gas to the Rio Grande LNG Terminal.[153]

67. In addition, on March 25, 2021, Sierra Club filed a request for supplemental environmental analysis exploring whether and how the cancellation of the Annova LNG Brownsville Project (Annova Project) impacts the feasibility of a single-pipeline alternative to the Rio Bravo Pipeline Project.[154] The cancellation of the Annova Project, Sierra Club argues, frees up capacity on the Valley Crossing Pipeline that could be used to transport gas for use at the Rio Grande LNG Terminal.[155] Sierra Club concedes that

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[151] Sierra Club EA Comments at 4-5.

[152] *Id.* at 6.

[153] *See id.* To the extent Sierra Club suggests that the Commission has not demonstrated a need for the Rio Bravo Pipeline Project's original proposal—i.e., the delivery of 4.5 Bcf/d of natural gas to the Rio Grande LNG Terminal—this argument is an improper collateral attack on the Authorization Order and need not be considered further. *See* Sierra Club EA Comments at 4. The Commission previously confirmed that the Rio Bravo Pipeline Project did not "represent an overbuild," evaluated its adequacy, reliability, safety, and environmental impacts, and considered alternatives that would achieve the original proposal's purpose of delivering 4.5 Bcf/d of natural gas to the Rio Grande LNG Terminal. *See* Rehearing Order, 170 FERC ¶ 61,046 at PP 25-26.

[154] Sierra Club March 25, 2021 Request for Supplemental EA/EIS at 1 (citing Annova LNG Common Infrastructure, LLC (Annova), Request to Vacate Section 3 Authorization, Docket No. CP16-480-000 (filed March 22, 2021)) (Sierra Club March 25 Comments). On April 15, 2021, the Commission issued an order vacating the NGA section 3 authorization granted to Annova on November 22, 2019, in Docket No. CP16-480-000. *Annova LNG Common Infrastructure, LLC*, 175 FERC ¶ 61,030 (2021).

[155] The amount of additional capacity is disputed. Sierra Club argues that the Annova Project cancellation frees up 1.2 Bcf/d of capacity on the Valley Crossing

modifications to the Valley Crossing Pipeline, such as installing additional compression, would have been necessary to provide Annova with the firm transportation service it had contracted for, but argues that such modifications would result in significantly less impact than construction of a second Rio Bravo pipeline.[156] Sierra Club again claims that the remaining quantity of gas needed to meet the Rio Grande LNG Terminal's needs could be delivered by a single Rio Bravo pipeline, rather than a dual pipeline system.[157] Essentially, Sierra Club suggests that the Annova Project's cancellation and the possibility of available capacity on the Valley Crossing Pipeline constitute "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action" that require supplemental analysis under NEPA.[158]

68. For a number of reasons, Rio Bravo disputes Sierra Club's suggestion that supplemental NEPA analysis is required, and asserts that, even if "significant new circumstances or information" were present, the potential future expansion of the Valley Crossing Pipeline is not a reasonable alternative that would merit further analysis.[159] Specifically, Rio Bravo argues that: (1) its proposed action remains unchanged and Sierra Club has failed to identify any new impacts that have not already been addressed;[160] (2) Sierra Club's suggested alternative is not reasonable as it fails to meet the Amendment Project's purpose of providing Rio Bravo with additional operational flexibility in meeting the requirements of the project shipper;[161] and (3) the alternative is

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Pipeline, pointing to a statement in the Commission's authorization order that states that the "Annova LNG Brownsville Project will receive . . . up to 1.2 [Bcf/d] of natural gas from the existing intrastate system of Valley Crossing Pipeline, LLC." Sierra Club March 25 Comments at 1-2 (citing *Annova Common Infrastructure, LLC*, 169 FERC ¶ 61,132, at P 9 (2019)). Rio Bravo challenges Sierra Club's estimate of Annova's contracted volume on the Valley Crossing Pipeline, asserting instead that the now cancelled project was designed to receive 0.9 Bcf/d of feed gas from the Valley Crossing Pipeline. *See* Rio Bravo April 27 Comments at 5.

[156] Sierra Club March 25 Comments at 1-2.

[157] *See id.* at 2.

[158] *Id.* at 2 (citing 40 C.F.R. § 1502.9(c)(1)(ii) (2019); *id.* § 1502.9(d)(1)(ii) (2020)).

[159] *See generally* Rio Bravo April 27 Comments.

[160] *See id.* at 2-4.

[161] *See id.* at 4-6.

further not reasonable because it is infeasible,[162] impractical,[163] and relies on the speculative actions of third parties.[164]

69. John Young also requested that the Commission provide an alternatives analysis that compares several pipeline route alternatives in terms of public health and safety and impacts;[165] and Mary Branch requested that the Commission consider alternative pathways to avoid 95.2% environmental justice communities cited in Rio Bravo's documentation.[166]

70. We find that the EA properly considered alternatives to the Amendment Project. The applicant's statement of purpose and need informs the choice of alternatives.[167] As stated in the EA, the purpose of the Amendment Project is "to provide flexibility and efficiency in satisfying the requirements of the natural gas shipper supplying natural gas to the Rio Grande LNG Terminal."[168] The EA examined three alternatives to the Amendment Project: (1) a no-action alternative; (2) a system alternative using the Valley

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[162] *See id.* at 7-9 (describing engineering and design considerations that would be impaired by eliminating the second Rio Bravo pipeline in favor of capacity on the Valley Crossing Pipeline).

[163] *See id.* at 9-10 (describing timing and cost considerations, such as the need for Valley Crossing Pipeline to design and build a second pipeline and the need for Rio Bravo to redesign and add compression to its own pipeline system to accommodate a significant increase in capacity on a single pipeline, that would "render the alternative logistically impractical").

[164] *See id.* at 11-13.

[165] John Young October 20, 2022 Comments at 5.

[166] Mary Branch October 21, 2022 Comments at 1.

[167] CEQ advises that "a reasonable range of alternatives depends on the nature of the proposal and the facts in each case." CEQ, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, 46 Fed. Reg. 18,026, 18,027 (1981). An agency need only consider alternatives that will bring about the ends of the proposed action, and the evaluation is "shaped by the application at issue and by the function that the agency plays in the decisional process." *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195, 199 (D.C. Cir. 1991). Courts have upheld agencies' use of applicants' project purpose and need as the basis for evaluating alternatives. *See, e.g., City of Grapevine, Tex. v. Dept. of Transp.*, 17 F.3d 1502, 1506 (D.C. Cir. 1994).

[168] Amendment Project EA at 2.

Crossing Pipeline; and (3) a single 60-inch-diameter pipeline.[169] The EA stated that under the no-action alternative, the environmental impacts associated with the Rio Bravo Pipeline Project would still occur because at that time, Rio Bravo had received authorization for the project as originally designed, pursuant to the terms and conditions of the Authorization Order.[170] Because the no-action alternative would not meet the Amendment Project's objectives and would result in greater environmental impacts, Commission staff did not recommend it.[171] The EA also concluded that a single 60-inch-diameter pipeline, an alternative previously considered in the final EIS, remained infeasible due to safety and constructability issues, as well as operational inferiorities.[172]

71. John Young's and Mary Branch's request to consider alternative routes in terms of public health and safety impacts and avoidance of environmental justice communities, appears directed at the entire length of the authorized pipelines. We find their comments to be outside the scope of this proceeding because, with respect to the route of the dual pipeline, the Amendment Project only involves 0.2-mile extension of the pipelines to interconnect the pipelines with the LNG Terminal,[173] all within the already approved footprint of the LNG Terminal.

72. With respect to the configuration of the already approved dual pipeline, the Amendment Project is limited in scope as it only involves a 6-inch diameter increase for Pipeline 1, and a 0.2-mile extension and operating pressure change for Pipeline 1 and Pipeline 2; however, commenters propose the Valley Crossing Pipeline as a system alternative. As discussed in the EA, the Valley Crossing Pipeline is an intrastate pipeline that is fully subscribed by end users in Mexico.[174] The pipeline system would have had

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[169] *Id.* at 48-49.

[170] *Id.* at 48.

[171] *Id.*

[172] *Id.* at 49 (dismissing this alternative in part because a single pipeline, unlike Rio Bravo's dual pipeline system, could require shutting down or limiting gas delivery during maintenance and inspection activities).

[173] The pipeline originally would have interconnected and ended at the Compressor Station 3, which was sited entirely within the footprint of the approved LNG terminal. *See id.* at 9.

[174] *Id.* at 49.

to been expanded to accommodate service to the Annova Project.[175] There is no evidence that, given the cancellation of the Annova Project, there has been any expansion of that system resulting in available firm capacity. Thus, as explained in the EA, any transportation service that could be obtained on the Valley Crossing Pipeline to supply the Rio Grande LNG Terminal would be on an interruptible basis only.[176] Additionally, there is no evidence that Valley Crossing Pipeline, LLC, an entity not subject to our jurisdiction, is either willing or able to modify its facilities in a way that would create enough additional firm capacity to eliminate the need for Rio Bravo's Pipeline 2. Therefore, we agree with the EA's conclusion that the Valley Crossing Pipeline is not a feasible alternative to the Amendment Project.[177]

73. As we have previously explained, the Commission does not independently design systems for pipeline companies; rather, the Commission ensures that any proposed project it approves is or will be required by the public convenience and necessity.[178] Sierra Club has not shown that the cancellation of an unrelated LNG terminal constitutes "substantial changes in the proposed action that are relevant to environmental concerns" or "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts" that merit supplemental analysis under NEPA.[179]

11. Environmental Justice

74. With respect to the proposed Amendment Project, the EA explains that the project involves elimination and modifications to the facilities authorized under the Rio Bravo Pipeline Project.[180] Sierra Club and Mr. John Young requested that the Commission consider the impacts of the proposed modifications at Compressor Station 1 on minority

[175] *See* Rio Bravo April 27 Comments at 11-12 (explaining that, prior to project cancellation, Annova had a contract with the Valley Crossing Pipeline "that would have been made available only through future expansions of that pipeline.").

[176] Amendment Project EA at 49.

[177] *Id.*

[178] Rehearing Order, 170 FERC 61,046 at P 25.

[179] 40 C.F.R. § 1502.9(c)(1).

[180] Amendment Project EA at 19.

and low-income populations. Impacts on environmental justice communities within a 50-kilometer radius around Compressor Station 1 are discussed below.[181]

75. Staff finds that there would be no substantial change to wetlands, surface water, tourism, recreational and subsistence fishing, visual, socioeconomics, traffic, air quality, or noise impacts on environmental justice communities associated with the project modifications from the Amendment Project, as compared to the original previously authorized Rio Bravo Pipeline Project. Additionally, environmental justice concerns are not present for Amendment Project facilities for other resource areas such as geology, soils, groundwater, fisheries, wildlife, or cultural impacts due to the de minimis impact the project would have on these resources.

76. Commission staff provides an updated analysis of impacts on environmental justice communities in conjunction with its supplemental environmental review of the Rio Bravo Pipeline Project on remand from the court. As detailed below, for the Rio Bravo Pipeline Project, as amended, Commission staff identified 106 environmental justice community block groups impacted by the pipeline project facilities,[182] and concluded that impacts from construction and operation of Meter Station HS4 and Meter Station at the LNG Terminal, Contractor Yards 1, 2, and 3, and a majority of the 135-mile-long pipelines, would be disproportionately high and adverse, as impacts would be predominately borne by environmental justice communities, but that impacts from these facilities would be less than significant.[183] Staff concludes that impacts from construction and operation of Compressor Station 1 would not be disproportionately high and adverse as impacts would not be predominately borne by environmental justice communities; additionally, impacts from Compressor Station 1 would be less than significant.[184] We agree.

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[181] *See infra* P 165.

[182] *See infra* PP 165-168, 179. Fourteen environmental justice community block groups will be crossed by the pipeline; 87 environmental justice communities are within a 50-kilometer radius of Compressor Station 1; one environmental justice community block group is within a one-mile radius of a new meter station; one meter station is located within an environmental justice community; and each of the three contractor yards are located within an environmental justice community.

[183] *See infra* P 206.

[184] *See infra* P 173. Operations emissions associated with Compressor Station 1 would not cause an exceedance of the NAAQS. In addition, the radius of impact for Compressor Station 1 is approximately 0.6 mile (1 kilometer) for this facility. Outside this radius, Commission staff determined that the project would not contribute to adverse ambient air quality impacts. Therefore, based on Commission staff's updated

12. Rio Bravo's EA Comments

77. Rio Bravo submitted comments on the EA to clarify certain permitting and consultation details.[185] First, as noted above, Rio Bravo has received its modified CWA section 404 permit from the Army Corps[186] and its section 401 water quality certification from the Texas Railroad Commission.[187]

78. Second, Rio Bravo notes that the EA's discussion of consultation under section 106 of the National Historic Preservation Act is accurate,[188] but clarifies that an entry in Table 3 should be updated to reflect that the National Park Service's section 106 consultation is complete.[189] These clarifications are noted, but do not change the EA conclusion or warrant further clarification from the Commission.

13. Environmental Conclusion

79. Regarding the Amendment Project, based on the analysis in the EA, as supplemented herein, we conclude that if constructed and operated in accordance with Rio Bravo's application and supplements, and in compliance with the environmental conditions in Appendix A to this order, our approval of the Amendment Project proposal would not constitute a major federal action significantly affecting the quality of the human environment.

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environmental justice analysis, we conclude that operation emissions associated with Compressor Station 1 would not result in a significant impact on air quality in environmental justice communities.

[185] Rio Bravo January 21, 2020 Comments (Rio Bravo EA Comments).

[186] *See* Rio Bravo October 7, 2021 Filing.

[187] Rio Bravo stated that the Texas Railroad Commission confirmed on August 31, 2021, that the section 401 water quality certification issued on February 14, 2020, continued to be valid in light of the section 404 permit modifications. Rio Bravo May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at Response 1.

[188] Amendment Project EA at 18.

[189] *Compare* Rio Bravo EA Comments at 2 *with* Amendment Project EA at 11 (tbl. 3) (describing section 106 consultation with National Park Service as ongoing).

C. Pipeline Amendment Project Conclusion

80. Based on the discussion above, we find under NGA section 7 that the public convenience and necessity requires approval of Rio Bravo's request that the Commission amend the NGA section 7 certificate authorization issued by the Authorization Order to authorize it to construct and operate the project with the proposed Amendment Project facility modifications. Accordingly, Rio Bravo's NGA section 7 certificate authorization to construct and operate those facilities is amended as requested, subject to the conditions in this order and in the Authorization Order.

III. *Vecinos* Remand Proceeding

81. As discussed above, the D.C. Circuit remanded the Commission's authorization for the Rio Grande LNG Terminal and Rio Bravo Pipeline Project and directed the Commission to address deficiencies in its NEPA analyses of the projects' impacts on climate change and environmental justice communities. With respect to those two issues, we revise our environmental analysis below.

A. Remand Proceeding Procedural Issues

1. Commission's September 30, 2022 Notice and Comment Period

82. On February 3, August 16, and August 31, 2022, and on January 6 and February 10, 2023, Commission staff issued environmental information requests to Rio Grande regarding environmental justice communities, visual impacts, air quality modeling, and emergency planning, in order to address deficiencies noted in the D.C. Circuit's decision. Rio Grande responded to Commission staff's information requests on March 3, August 22, September 15, and November 2, 2022, and on January 20, January 27, February 13, and February 14, 2023. Similarly on May 2, May 10, and December 9, 2022, and on January 9 and February 15, 2023, Commission staff issued information requests to Rio Bravo, to which Rio Bravo provided responses on June 1 and December 29, 2022, and January 1 and February 21, 2023.

83. On September 30, 2022, the Commission issued a notice seeking public comments on Rio Grande and Rio Bravo's responses. The notice stipulated that initial comments were due no later than October 21, 2022, and reply comments no later than November 4, 2022. Numerous comments were filed during the initial comment period,[190] including:

[190] *See, e.g.*, John Young October 24, 2022 Comments; Nancy McNab et al. October 21, 2022 Comments; Dee Ruiz et al. October 21, 2022 Comments; Damian Blattler et al. October 21, 2022 Comments; Amelia Odegaard et al. October 21, 2022 Comments; Theresa Flanagan et al. October 21, 2022 Comments; Juan B. Mancias et al.

(1) statements in general opposition to the projects; (2) assertions of deficiencies in Rio Grande and Rio Bravo's responses, including the revised air modeling for the Rio Grande LNG Terminal; (3) concerns with project impacts on environmental justice communities, including the air quality impacts of volatile organic compounds (VOC) and particulate matter on those communities, inadequate outreach to environmental justice communities, and insufficient information provided on the impacts of offsite parking locations and Rio Grande's Emergency Response Plan; (4) concerns regarding climate change and GHGs; and (5) requests for public meetings in a town hall format with Spanish language translation and for all permit documents to be translated into the Spanish language. These comments are addressed below.

84. As noted, commenters requested that the Commission hold public meetings in a town hall format.[191] Commenters also requested that the Commission provide greater access to Spanish-speaking communities by providing Spanish language translation at any public meetings and provide a translated version of the Commission's requests for information and the comments and responses to the information requests from Rio Grande and Rio Bravo.[192]

85. In this proceeding, and consistent with how the Commission has processed other remand orders,[193] we reviewed the record to determine whether the deficiencies identified by the court could be redressed and what, if any, additional information would be helpful. This order addresses the particular issues identified by the court on remand.[194] Although the public had opportunities for involvement during the prefiling and environmental review processes associated with the Commission's original consideration of the

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October 21, 2022 Comments; Center for LNG October 21, 2022 Comments; and Sierra Club et al. October 19, 2022 Comments.

[191] *See* Sierra Club et al. October 19, 2022 Comments; *see also* Nancy McNab et al. October 21, 2022 Comments.

[192] *See* Sierra Club et al. October 19, 2022 Comments.

[193] *See Spire STL Pipeline LLC*, 181 FERC ¶ 61,232, at PP 18-20 (2022) (determining the record was sufficient to allow the Commission to address the issues on remand without additional requested briefing); *on reh'g Spire STL Pipeline LLC*, 183 FERC ¶ 61,048 (2023); *NEXUS Gas Transmission, LLC,* 172 FERC ¶ 61,199 (2020) (reviewing the record and the court's instructions on remand to issue a certificate of convenience and public necessity without soliciting additional comments).

[194] *See, e.g.*, *SFPP, L.P. v. FERC*, 967 F.3d 788, 797 (D.C. Cir. 2020), *cert. dismissed*, 141 S. Ct. 2170 (2021) (finding that on remand it is up to the Commission to determine if the record should be reopened).

projects,[195] during this remand proceeding the Commission provided additional opportunities for the public to comment and respond to information filed by Rio Grande and Rio Bravo related to the issues before us on remand. As stated above, on September 30, 2022, we explicitly solicited comments on the responses provided by Rio Grande and Rio Bravo to Commission staff's information requests and received over 150 comments. We have considered and responded to all comments within the scope of this remand proceeding and, therefore, because the record is sufficient for us to address the issues identified by the court, we decline to hold additional public meetings on the remanded issues. As for requests related to Spanish translation of documents, while we are not providing such translations in this proceeding, the Commission continues to consider how we can provide greater accessibility to our processes for non-English speaking populations.

86. On November 4, 2022, Rio Grande, American Petroleum Institute, and Rio Bravo separately submitted comments requesting prompt rulings on the remanded issues and the pipeline amendment. As we are issuing this order, the requests are moot.

87. On December 2, 2022, Vecinos para el Bienestar de la Comunidad Costera and Sierra Club filed a joint comment letter pointing out discrepancies between Rio Grande and Texas LNG Brownsville LLC's (Texas LNG) air modeling data provided in response to Commission staff's information requests and arguing that the companies must explain these discrepancies so that the Commission can properly analyze the impacts of the projects on the surrounding environment and communities.[196] Rio Grande's November 2, 2022 data response to Commission staff's August 16, 2022 environmental information request included updated refined air quality modeling, and on January 20 and 27, 2023, Rio Grande submitted additional information regarding the air modeling discrepancies, which is discussed below.[197]

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[195] *See* Final EIS at 4-468. As the final EIS notes, the applicant provided materials regarding the project in both English and Spanish and Spanish-speaking representatives were present at both the public scoping and comment meetings held in Port Isabel.

[196] Commenters also allege that the Commission improperly used significant impact levels to "determine whether a project causes or contributes to exceedances of the National Ambient Air Quality Standards and the emissions from the facility will have disproportionately high and adverse impacts on Environmental Justice communities," and recommend using other modeling approaches for determining impacts on such communities. Vecinos para el Bienestar de la Comunidad Costera and Sierra Club December 2, 2022 Comments at 4. These comments are discussed in the environmental justice section below.

[197] *See infra* PP 138-151.

2. Comments Outside the Scope of this Order

88. Commenters raised issues that, except with respect to comments on potential impacts to environmental justice communities, are outside the scope of the court's mandate. These comments generally fall within the following categories: (1) opposition to the Rio Grande LNG Terminal and Rio Bravo Pipeline Project and the Commission's approval of both projects; (2) general comments in support of the projects and requests for regulatory clarity;[198] (3) cultural resource concerns, including concerns relating to consultation with Tribes; (4) biological resource concerns, including impacts on endangered species, wetlands, and permits under the Clean Water Act; (5) upstream impacts; (6) market need and general public interest concerns; and (7) various opinions regarding the Commission, LNG, and energy infrastructure. The Commission will not address these arguments because the Commission considered them in the Authorization and Rehearing Orders[199] and the court's remand was limited to two issues—whether the social cost of GHGs or similar protocol should be used and the scope of the Commission's environmental justice analysis—and thus all other issues are collateral attacks on those orders and need not be considered further.[200]

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[198] *See, e.g.,* State Representative Erin Elizabeth Gamez March 17, 2023 Comments; Port of Brownsville Chairman Esteban Guerra March 16, 2023 Comments; Los Fresnos Chamber of Commerce Executive Director Val Champion March 16, 2023 Comments; Valley Regional Medical Center Chief Executive Officer David Irizarry March 15, 2023 Comments; Mayor Alejandro Flores (City of Los Fresnos, Texas) March 15, 2023 Comments; Cameron County Commissioner Sofia C. Benavides March 14, 2023 Comments; U.S. Representatives Dan Crenshaw & Michael C. Burgess August 23, 2022 Comments; U.S. Representative Mayra Flores August 15, 2022 Comments; U.S. Senator John Cornyn et al. July 7 & June 28, 2022 Comments; U.S. Representative Bill Johnson June 13, 2022 Comments; and U.S. Representative Jake Ellzey May 25, 2022 Comments.

[199] *See* Rehearing Order, 170 FERC ¶ 61,046 at PP 10-20 (discussing market need and public interest); *id.* at PP 33, 84-89 (discussing threatened and endangered species); *id.* at P 83 (discussing wetlands); Authorization Order, 169 FERC ¶ 61,131 at PP 100-102 (addressing cultural resources); *id.* at PP 83-91 (discussing threatened and endangered species); *id.* at PP 75-76 (discussing wetlands); *id.* at PP 75, 77, & 128 (addressing CWA permit concerns); *id.* at P 59 (discussing upstream impacts). *See also* Final EIS at 4-55 to 4-68 (discussing wetlands); *id.* at 4-133 to 4-163 (discussing threatened and endangered species); *id.* at 4-238 to 4-242 (discussing cultural resources).

[200] *See, e.g.*, *Fla. Se. Connection*, 162 FERC ¶ 61,233, at P 16 (2018) (declining to consider issues that fell outside the scope of the court's mandate); *Arlington Storage Co.,*

B. Remand Discussion

89. As discussed above, the D.C. Circuit remanded the Commission's orders authorizing the Rio Grande LNG Terminal and the Rio Bravo Pipeline Project and directed the Commission to: (1) address the argument that it must, under CEQ's regulations, apply the social cost of carbon protocol to analyze the projects' impacts on climate change; and (2) explain the decision to limit the scope of its environmental justice analysis of the projects' impacts to those communities within two miles of the project or else analyze the project's impacts within a different radius. In response to the court's directive, we address the argument regarding the social cost of carbon and 40 C.F.R. § 1502.21(c) as well as update our analysis of the projects' environmental justice impacts consistent with the Commission's current practice and with CEQ[201] and the U.S. Environmental Protection Agency (EPA)[202] guidance.

1. Greenhouse Gas Emissions and Climate Change

90. The court directed the Commission, on remand, to explain whether section 1502.21(c) of CEQ's NEPA-implementing regulations requires the Commission to "apply the social cost of carbon protocol or some other analytical framework, as 'generally accepted in the scientific community' within the meaning of the regulation, and if not, why not."[203] Sierra Club asserts that, in lieu of comparing the GHG emissions of a project to the overall emission reduction targets of a state or national goals, the Commission could use the social cost of carbon tool to help it assess significance.[204]

LLC, 149 FERC ¶ 61,158 (2015) (rejecting a request for rehearing of a notice to proceed with construction as a collateral attack on the underlying orders).

[201] CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 4 (Dec. 1997) (CEQ's *Environmental Justice Guidance*), https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf.

[202] *See generally* EPA, *Promising Practices for EJ Methodologies in NEPA Reviews* (Mar. 2016) (*Promising Practices*), https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

[203] *Vecinos*, 6 F.4th at 1330 (quoting 40 C.F.R.§ 1502.21(c)).

[204] Sierra Club April 27, 2022 Motion to Intervene at 20.

91. Section 1502.21(c) of CEQ's regulations requires that,

> [i]f the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are unreasonable or the means to obtain it are not known, the agency shall include within the environmental impact statement:
>
> (1) A statement that such information is incomplete or unavailable;
>
> (2) A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
>
> (3) A summary of existing credible scientific evidence that is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment; and
>
> (4) The agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.[205]

92. The social cost of carbon protocol, now updated to calculate the social cost of specific GHGs,[206] is an administrative tool intended to quantify, in dollars, estimates of long-term damage that may result from future emissions of carbon dioxide, nitrous oxide, and methane. Accordingly, although we are including the social cost of GHG figures for informational purposes, we find that because the social cost of GHGs tool was not developed for project level review and, as discussed below, does not enable the Commission to credibly determine whether the GHG emissions are significant, section 1502.21 of the CEQ regulations does not require its use in this proceeding.

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[205] 40 C.F.R. § 1502.21(c). We note that at the time the Final EIS was prepared, this regulation was codified at 40 C.F.R. § 1502.22(b).

[206] The IWG published its first estimates of the social cost of carbon in 2010, which calculated the cost of the damages created by one extra ton of carbon dioxide emissions. In 2016, the IWG published a technical update that included the social costs of methane (social cost of CH_4) and nitrous oxide (social cost of N_2O) thus creating the social cost of GHGs nomenclature.

93. While we have recognized in some past orders that social cost of GHGs may have utility in certain contexts such as rulemakings,[207] we have also found that calculating the social cost of GHGs does not enable the Commission to determine credibly whether the reasonably foreseeable GHG emissions associated with a project are significant or not significant in terms of their impact on global climate change.[208] Currently, however, there are no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria.[209] Nor are we aware of any other currently scientifically accepted method that would enable the Commission to determine the significance of reasonably foreseeable GHG emissions.[210] The D.C. Circuit has repeatedly upheld the Commission's decisions not to use the social cost of GHGs, including to assess significance.[211]

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[207] *Fla. Se. Connection, LLC*, 164 FERC ¶ 61,099, at PP 35-37 (2018).

[208] *See Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, (2017), *aff'd sub nom*., *Appalachian Voices v. FERC*, 2019 WL 847199 (D.C. Cir. 2019); *Del. Riverkeeper v. FERC*, 45 F.th 104, 111 (D.C. Cir. 2022). The social cost of GHGs tool merely converts GHG emissions estimates into a range of dollar-denominated figures; it does not, in itself, provide a mechanism or standard for judging "significance."

[209] *Tenn. Gas Pipeline Co., L.L.C.*, 181 FERC ¶ 61,051 at P 37; *see also Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, *order on reh'g*, 163 FERC ¶ 61,197, at PP 275-297 (2018), *aff'd*, *Appalachian Voices v. FERC*, No. 17-1271, 2019 WL 847199, at 2 (D.C. Cir. Feb. 19, 2019) (unpublished) ("[The Commission] gave several reasons why it believed petitioners' preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act. That is all that is required for NEPA purposes."); *EarthReports v. FERC*, 828 F.3d 949, 956 (D.C. Cir. 2016) (accepting the Commission's explanation why the social cost of carbon tool would not be appropriate or informative for project-specific review, including because "there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes"); *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205, at P 75 (2022); *See, e.g., LA Storage, LLC*, 182 FERC ¶ 61,026, at P 14 (2023); *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206 at P 91.

[210] *See, e.g.*, *LA Storage, LLC*, 182 FERC ¶ 61,026, at P 14 ("there are currently no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria").

[211] *See*, *e.g.*, *EarthReports*, 848 F.3d at 956 (upholding the Commission's decision not to use the social cost of carbon tool due to a lack of standardized criteria or methodologies, among other things); *Del. Riverkeeper v. FERC*, 45 F.4th 104 (also

94. For informational purposes, we are disclosing Commission staff's estimate of the social cost of GHGs associated with the reasonably foreseeable emissions from the projects, i.e., the emissions from the construction and operation of the projects.[212]

95. Commission staff calculated the social cost of GHGs based on methods and values contained in the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG)'s current draft guidance but note that different values will result from the use of other methods.[213]

96. For this proposed action, the reasonably foreseeable and causally connected GHG emissions are those associated with the projects' construction and operation. Rio Grande estimated that construction of the Rio Grande LNG Terminal would result in 2,659,332 tons of CO_2e emissions (equivalent to 2,412,505 metric tons of CO_2e) over the eight years of construction, inclusive of terminal, barge, and commissioning emissions.[214] GHG emissions, from the operation of the Rio Grande LNG Terminal would result in annual CO_2e emissions of about 6,451,324 tons per year (tpy) (equivalent to

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upholding the Commission's decision not to use the social cost of carbon); *Appalachian Voices v. FERC*, 2019 WL 847199 (D.C. Cir. 2019) (same).

[212] *See Vecinos*, 6 F.4th at 1329-30.

[213] Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, (Feb. 2021), https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf (IWG Interim Estimates Technical Support Document).

[214] As part of the remand proceeding, Commission staff issued data requests to Rio Grande to provide updated construction and operational emission estimates for the Rio Grande LNG Terminal. Staff uses the company's updated emissions numbers here. *See* Rio Grande January 27, 2023 Response to Commission staff January 6, 2023 Environmental Information Request; Rio Grande August 22, 2022 Response to Commission staff August 16, 2022 Environmental Information Request.

5,852,543 metric tpy),[215] which calculation assumes 100% utilization; i.e., it is assumed that the facilities are operated at maximum capacity for 365 days/year, 24 hours/day.[216]

97. Rio Bravo estimated the construction of the Rio Bravo Pipeline Project, as amended,[217] would result in 948,629 tons of CO_2e emissions (equivalent to 860,582 metric tons of CO_2e) over the five years of construction.[218] GHG emissions from the operation of the Rio Bravo Pipeline Project would result in annual CO_2e emissions of about 761,655 tons per year (tpy) (equivalent to 690,962 metric tpy), which calculation assumes 100% utilization; i.e., it is assumed that the facilities are operated at maximum capacity for 365 days/year, 24 hours/day.[219]

98. Commission staff calculated the social cost of carbon dioxide, nitrous oxide, and methane for the construction and operation of the Rio Grande LNG Terminal and Rio Bravo Pipeline Project.[220] For the calculations, staff assumed discount rates of

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[215] *Id.* As Rio Grande brings the trains online in phases, the operational emission estimates would be 1,632,275 tons of CO_2e emissions (equivalent to 1,480,775 metric tons of CO_2e) in 2026, 3,881,164 tons of CO_2e emissions (equivalent to 3,520,933 metric tons of CO_2e) in 2027, and 5,166,246 tons of CO_2e emissions (equivalent to 4,686,739 metric tons of CO_2e) in 2028. *Id.*

[216] *Id.* The estimate also includes fugitive emissions. We note that this calculation is an overestimate because facilities likely operate at full capacity during, what are typically, limited periods of full demand.

[217] As discussed above, the Amendment Project (Docket No. CP20-481-000) will eliminate Compressor Stations 2 and 3, Booster Stations 1 and 2 and related meter stations and modify Compressor Station 1 by increasing the horsepower of the station from 180,000 to 282,000 hp by replacing the six 30,000-hp natural gas turbine compressor units currently approved with four 43,000-hp natural gas turbine compressor units and two 55,000-hp electric-driven compressor units.

[218] As part of the remand proceeding, Commission staff issued data requests to Rio Bravo to provide updated construction and operational emission estimates for the Rio Bravo Pipeline Project. Staff uses the company's updated emissions numbers here. *See* Rio Bravo February 24, 2023 Response to Commission staff's February 15, 2023 Environmental Information Request.

[219] *Id.* The estimate also includes fugitive emissions.

[220] As noted above, Rio Grande and Rio Bravo provided updated emission estimates as part of the remand proceedings, which Commission staff used to calculate the social cost of GHGs. We note that this calculation is likely an overestimate because

five percent, three percent, and 2.5%,[221] the projects would begin construction activities in 2025, and that once construction activities are complete, emissions would transition to operational emissions. Noting these assumptions, the emissions from construction and operation of the Rio Grande LNG Terminal are calculated to result in a total social cost of GHGs equal to $1,521,398,883, $5,917,433,636, and $8,996,451,667, respectively (all in 2020 dollars).[222] Based on the 95th percentile of the social cost of GHGs and the three percent discount rate,[223] the total social cost of GHGs from the project is calculated to be $18,044,727,663 (in 2020 dollars).

99. Applying the same assumptions, the emissions from construction and operation of the Rio Bravo Pipeline Project are calculated to result in a total social cost of GHGs equal to $178,691,926, $679,418,079, and $1,027,470,669, respectively (all in 2020 dollars).[224] Based on the 95th percentile of the social cost of GHGs and the three percent discount

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pipelines only operate at full capacity during, what are typically, limited periods of full demand.

[221] IWG Interim Estimates Technical Support Document at 24. To quantify the potential damages associated with estimated emissions, the IWG methodology applies consumption discount rates to estimated emissions costs. The IWG's discount rates are a function of the rate of economic growth where higher growth scenarios lead to higher discount rates. For example, IWG's method includes the 2.5% discount rate to address the concern that interest rates are highly uncertain over time; the 3% value to be consistent with Office of Management and Budget Circular A-4 (2003) and the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002); and the five percent discount rate to represent the possibility that climate-related damages may be positively correlated with market returns. Thus, higher discount rates further discount future impacts based on estimated economic growth. Values based on lower discount rates are consistent with studies of discounting approaches relevant for intergenerational analysis. *Id.* at 18-19, 23-24.

[222] The IWG draft guidance identifies costs in 2020 dollars. *Id.* at 5 (tbl. ES-I).

[223] This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of CO_2] distribution." *Id.* at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

[224] The IWG draft guidance identifies costs in 2020 dollars. *Id.* at 5 (tbl. ES-I).

rate,[225] the total social cost of GHGs from the project is calculated to be $2,058,083,922 (in 2020 dollars).

100. Although Sierra Club recommends we articulate our own criteria for assessing the significance of the projected costs of the projects' greenhouse gas emission,[226] Sierra Club does not propose how the Commission might identify which social cost of GHG costs would be significant for purposes of NEPA.

101. The Commission has disclosed the projects' reasonably foreseeable GHG emissions. By adopting the analysis in the final EIS and Amendment Project EA, we recognize that the projects' contributions to GHG emissions globally contribute incrementally to future climate change impacts,[227] including impacts in the project region.[228] We note that there currently are no accepted tools or methods for the Commission to use to determine significance, therefore the Commission is not herein characterizing these emissions as significant or insignificant.[229] Accordingly, we have taken the required "hard look" and have satisfied our obligations under NEPA.

2. Environmental Justice

102. The court found the Commission's analysis of environmental justice impacts to be deficient, directing the Commission on remand to either explain why it chose to analyze the projects' impacts only on communities within a two-mile-radius area of review, or, in the alternative, to analyze the projects' impacts on communities in an area of review with a different radius from each project site, and determine whether the Commission's

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[225] This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of CO_2] distribution." *Id.* at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

[226] Rehearing Order, 170 FERC ¶ 61,046 at PP 100-11; *see also* Sierra Club April 27, 2022 Motion to Intervene at 19-20.

[227] *See* Final EIS at 4-481; Amendment Project EA at 44-47.

[228] *See* Final EIS at 4-480 – 4-481 (discussing observations from the Fourth Assessment Report); Amendment Project EA at 45-46 (same).

[229] The February 18, 2022 Interim GHG Policy Statement, *Consideration of Greenhouse Gas Emissions in Nat. Gas Infrastructure Project Revs.*, 178 FERC ¶ 61,108 (2022) which proposed to establish a NEPA significance threshold of 100,000 tons per year of CO_2e as a matter of policy, has been suspended, and opened to further public comment. *Order on Draft Policy Statements*, 178 FERC ¶ 61,197, at P 2 (2022).

environmental justice conclusion still holds.[230] Accordingly, on remand, Commission staff conducted a new environmental justice analysis using our current methods for determining an area of review, consistent with CEQ[231] and EPA[232] guidance and recommendations, and analyzed the projects' impacts on environmental justice communities within those areas. Below, Commission staff has identified the presence of impacted environmental justice communities and has analyzed associated impacts from the Rio Grande LNG Terminal and Rio Bravo Pipeline Project, as amended in Docket No. CP20-481-000.[233]

103. In conducting NEPA reviews of proposed natural gas projects, the Commission follows Executive Order 12898, which directs federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their actions on minority and low-income populations (i.e., environmental justice communities).[234] Executive Order 14008 also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged

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[230] *Vecinos*, 6 F.4th at 1331.

[231] CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 4 (Dec. 1997) (CEQ's *Environmental Justice Guidance*), https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf.

[232] *See generally Promising Practices*.

[233] All references to the Rio Bravo Pipeline Project throughout this section are to the project as amended in this order. Thus, for purposes of staff's environmental justice analysis the original pipeline project facilities that were eliminated by the Pipeline Amendment, e.g., Compressor Stations 2 and 3, one meter station at Compressor Station 1; and two interconnect booster stations in Kenedy County, Texas, are not analyzed herein.

[234] Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994). While the Commission is not one of the specified agencies in Executive Order 12898, the Commission nonetheless addresses environmental justice in its analysis, in accordance with our governing regulations and guidance, and statutory duties. *See* 15 U.S.C. § 717b; *see also* 18 C.F.R. § 380.12(g) (requiring applicants for projects involving significant aboveground facilities to submit information about the socioeconomic impact area of a project for the Commission's consideration during NEPA review); FERC *Guidance Manual for Environmental Report Preparation*, at 4-76 to 4-80 (Feb. 2017), https://www.ferc.gov/sites/default/files/2020-04/guidance-manual-volume-1.pdf.

communities, as well as the accompanying economic challenges of such impacts."[235] Environmental justice is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[236]

104. Consistent with CEQ and EPA guidance and recommendations, the Commission's methodology for assessing environmental justice impacts considers: (1) whether environmental justice communities (e.g., minority or low-income populations)[237] exist in the project area; (2) whether impacts on environmental justice communities are disproportionately high and adverse; and (3) possible mitigation measures.[238] Consistent

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[235] Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Jan. 27, 2021). The term "environmental justice community" includes disadvantaged communities that have been historically marginalized and overburdened by pollution. *Id.* at 7629. The term also includes, but may not be limited to minority populations, low-income populations, or indigenous peoples. *See* EPA, *EJ 2020 Glossary* (Aug. 18, 2022), https://www.epa.gov/environmentaljustice/ej-2020-glossary.

[236] EPA, *Learn About Environmental Justice*, https://www.epa.gov/environmentaljustice/learn-about-environmental-justice (Sep. 6, 2022). Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. *Id.* Meaningful involvement of potentially affected environmental justice community residents means: (1) people have an appropriate opportunity to participate in decisions about a proposed activity that may affect their environment and/or health; (2) the public's contributions can influence the regulatory agency's decision; (3) community concerns will be considered in the decision-making process; and (4) decision makers will seek out and facilitate the involvement of those potentially affected. *Id.*

[237] *See generally* Exec. Order No. 12,898, 59 Fed. Reg. 7629. Minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

[238] CEQ offers recommendations on how federal agencies can provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices. There were opportunities for public involvement during the Commission's prefiling and environmental review processes during the original authorization proceeding. Final EIS at 1-11 to 1-13, and 4-236. As part of the remand proceeding, the Commission requested public comments and reply comments on Rio Grande's and

with the Commission's current methodology for identification of environmental justice communities, staff reviewed 2020 U.S. Census Bureau American Community survey data for the impact area surrounding the Rio Grande LNG Terminal and Rio Bravo Pipeline Project. As recommended in *Promising Practices*, the Commission uses the 50% and the meaningfully greater analysis methods to identify minority populations.[239] Specifically, a minority population is present where either: (1) the aggregate minority population of the block groups in the affected area exceeds 50% ; or (2) the aggregate minority population in the block group affected is 10% higher than the aggregate minority population percentage in the county.[240]

105. CEQ's *Environmental Justice Guidance* also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices*' low-income threshold criteria method, low-income populations are identified as block groups where the percent of a low-income population in the identified block group is equal to or greater than that of the county.[241]

106. To identify potential environmental justice communities, Commission staff used 2020 U.S. Census American Community Survey data[242] for the race, ethnicity, and poverty data at the state, county, and block group level. Additionally, in accordance with *Promising Practices*, staff used EJScreen, EPA's environmental justice mapping and screening tool, as an initial step to gather information regarding minority and low-income populations, potential environmental quality issues, environmental and demographic indicators, and other important factors. Appendix B provides current environmental justice community data for the areas affected by the projects, including data for the

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Rio Bravo's responses to earlier information requests. September 30, 2022 Notice Seeking Public Comment on Responses to Information Requests.

[239] *See Promising Practices* at 21-25.

[240] Here, Commission staff selected Cameron, Jim Wells, Kleberg, Nueces, and Willacy Counties, Texas as the comparable reference communities to ensure that affected environmental justice communities are properly identified. A reference community may vary according to the characteristics of the particular project and the surrounding communities.

[241] Tables 1, 2, and 3 of Appendix B present this data.

[242] U.S. Census Bureau, American Community Survey 2020 ACS 5-Year Estimates Detailed Tables, File# B17017, *Poverty Status in the Past 12 Months by Household Type by Age of Householder*, https://data.census.gov/cedsci/table?q=B17017; File #B03002 *Hispanic or Latino Origin By Race*.

affected block groups, state, and county, and maps detailing the affected block groups in relation to the Rio Grande LNG Terminal and Rio Bravo Pipeline Project facilities.

107. Commission staff collected the block group level data, as discussed in further detail below, and conducted an impacts analysis for the identified environmental justice communities and evaluated health and environmental hazards, the natural physical environment, and associated social, economic, and cultural factors to determine whether impacts would be disproportionately high and adverse on environmental justice communities and also whether those impacts would be significant.[243] Commission staff assessed whether impacts on an environmental justice community are disproportionately high and adverse, consistent with EPA's recommendations in *Promising Practices*.[244]

108. As discussed above, the court's opinion explained that an agency's environmental justice analysis must have an area of review for impacts on environmental justice communities that is reasonable and adequately explained, with a rational connection between the facts and the decision made.[245] In response, Commission staff has reanalyzed the projects' impacts on environmental justice communities within an area of review based on the measured distance of the furthest estimated direct impact for each project site.[246]

109. Project facilities located within environmental justice communities include the Rio Grande LNG Terminal, and the following Rio Bravo Pipeline Project facilities: a

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[243] *See Promising Practices* at 33 (stating that "an agency may determine that impacts are disproportionately high and adverse, but not significant within the meaning of NEPA" and in other circumstances "an agency may determine that an impact is both disproportionately high and adverse and significant within the meaning of NEPA").

[244] *Id.* at 44-46 (explaining that there are various approaches to determining whether an action will cause a disproportionately high and adverse impact, and that one recommended approach is to consider whether an impact would be "predominantly borne by minority populations or low-income populations"). We recognize that EPA and CEQ are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

[245] *Vecinos*, 6 F.4th at 1330.

[246] Mr. John Young requested that the Commission incorporate in the comparison maps exhibiting the authorized project path and minority and low-income population instead of the modified project path and minority and low-income populations. Mapping of all facilities in relation to minority and low-income communities is included in Appendix B. App. B Fig. 1 to 23.

majority of the 135.7-mile,[247] 48-inch-diameter natural gas pipelines (Pipelines 1 and 2); two meter stations (Meter Station HS4 and the Meter Station located at the LNG terminal); Contractor Yards 1, 2, and 3; and portions of the 2.4-mile-long pipeline header system. Rio Bravo's Meter Station HS3 is not located within an environmental justice block group; however, there is an environmental justice block group within a 1-mile radius of the facility. Rio Bravo's Compressor Station 1 is not located within an environmental justice community; however, there are environmental justice communities within the 50-kilometer geographic scope of analysis. Rio Bravo's Meter Stations HS1 and HS2 are not located within an environmental justice community, and there are no environmental justice communities within a one-mile radius of the facilities.

110. Sierra Club comments that the Commission must perform an adequate environmental justice analysis incorporating relevant changes in environmental justice data since the Commission's initial analysis. We agree and confirm that, herein, Commission staff have conducted an updated analysis of impacts on environmental justice communities using both updated data and an expanded area of review radius. For this analysis, Commission staff determined that potential impacts on the identified environmental justice communities may relate to wetlands, recreational and subsistence fishing, tourism, socioeconomics, road and marine traffic, noise, safety, air quality, and visual resources. Environmental justice concerns are not present for other resource areas such as geology, groundwater, wildlife, land use, surface water,[248] or cultural resources,

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[247] As noted above in footnote 37, Rio Bravo must further modify – for Commission review through either the variance or amendment process – an approximately 6.7 portion of its pipeline in in compliance with FWS's October 2, 2019 Biological Opinion (the BO reroute). In its December 29, 2022 response to a Commission staff data request, Rio Bravo provided information regarding three possible pipeline reroutes that it plans to propose to the Commission either as a variance request, if applicable, or an amendment: the approximately 6.7 mile BO reroute and two other landowner-driven reroutes, which are approximately 0.6 and 0.8 miles long, referred to as the North Floodway and Arroyo Colorado Route Adjustment, respectively. Based on the information provided, Commission staff confirmed that the three pipeline reroutes are entirely within the same environmental justice census block groups as the original pipeline route. Thus, the pipeline reroutes will not alter our analysis of the project impacts on environmental justice communities in this order.

[248] The final EIS determined that increased vessel traffic along the Brownsville Ship Channel would result in a significant cumulative impact on surface water resources during operations from increases in turbidity and shoreline erosion. *See* Final EIS at 4-427. Impacts on environmental justice communities associated with turbidity are discussed below under *Tourism*. Impacts on environmental justice communities associated with shoreline erosion are discussed below under *Marine Traffic*.

due to the minimal overall impact the project would have on environmental justice communities. Sierra Club requests that the Commission analyze "whether [proposed] mitigation measures will be effective at blunting any disproportionate impacts that will be experienced by environmental justice communities."[249] A discussion of applicable mitigation measures is included for each impact topic.

a. Rio Grande LNG Terminal Project

i. Brownsville and Port Isabel Offsite Parking and Storage Areas

111. Rio Grande has identified two locations in Cameron County that will be used for temporary offsite parking and storage. For the Brownsville offsite parking/storage location, Commission staff identified two environmental justice community block groups within a one-mile radius of the site. Of those block groups, both have a minority population and a low-income population that exceed the respective thresholds. For the Port Isabel offsite parking/storage location, Commission staff identified four environmental justice community block groups within a one-mile radius of the site. Of those block groups, one has a minority population that exceeds 50%, one has a low-income population that is equal to or greater than its respective county, and two have both a minority population and a low-income population that exceed the respective thresholds.[250]

112. Commission staff finds that a one-mile radius around the Brownsville and Port Isabel sites is the appropriate unit of geographic analysis for assessing the facilities' impacts on environmental justice communities given the likely concentration of air quality, noise, visual, and traffic impacts. Sierra Club contends that FERC must analyze offsite parking and storage impacts to environmental justice communities "within a rationally determined geographic radius."[251] Commission staff has determined that the temporary impacts related to noise, visual, traffic, and air emissions from the offsite parking locations would be localized such that a radius greater than one mile is not warranted. A one-mile radius for each of the two offsite parking locations represents a conservative estimate of the extent of impacts on environmental justice communities, the furthest of which would be associated with traffic impacts. Based on an updated traffic impact analysis,[252] the roadway level of service would remain unchanged at all locations

[249] Sierra Club et al. October 19, 2022 Comments at 16.

[250] App. B at tbl. 3.

[251] Sierra Club et al. October 19, 2022 Comments at 15.

[252] Rio Grande March 13, 2019 Filing (Traffic Impact Analysis Update).

on SH48 within one mile of the parking facilities;[253] therefore, a one-mile radius is sufficient for analysis of impacts.

113. Rio Grande has indicated that it does not plan to use the Brownsville and Port Isabel offsite parking/storage locations until use of its onsite parking and storage areas become limited, which it anticipates to occur near the start of construction of Liquefaction Train 4.[254] At this point, Rio Grande states that personnel will use the Brownsville offsite parking location and be bused to the LNG terminal, resulting in a maximum of 150 bus roundtrips (7.1 miles each way).[255] The nearest residence to this offsite location is over three miles away (southwest of the offsite location).[256] Traffic to and from this offsite location to the LNG terminal would use SH-48 and not pass any residences.[257]

114. When onsite storage areas become limited, approximately 50 of the 150 bus roundtrips per day are expected from the Port Isabel location.[258] In addition, when onsite storage areas become limited, approximately 50 material truck roundtrips per day are expected from this offsite location.[259] Sierra Club contends that impacts on environmental justice communities related to increased traffic must be analyzed regardless of the current use of the land and potential impacts must be accurately identified.[260] The nearest residence within an environmental justice community is located approximately 0.3 miles northwest of this offsite location.[261] Additionally, Rio Grande's use of this offsite location is not inconsistent with current traffic, as it is located within an industrial area of Port Isabel and large material trucks regularly transit in and out of the

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[253] Rio Grande August 22, 2022 Response to Commission staff's August 16, 2022 Environmental Information Request at 24.

[254] *Id.* at 22.

[255] *Id.*

[256] Rio Grande August 22, 2022 Response to Commission staff's August 16, 2022 Environmental Information Request at 17.

[257] *Id.*

[258] *Id.*

[259] *Id.*

[260] Sierra Club et al. October 19, 2022 Comments at 15.

[261] Rio Grande August 22, 2022 Response to Commission staff's August 16, 2022 Environmental Information Request at 17.

area.[262] While travelers along SH-48 from offsite locations to the LNG terminal may experience additional adverse impacts associated with traffic delays, traffic levels would maintain a Level of Service[263] C or better and, accordingly, we conclude that those impacts will be less than significant.[264]

115. The Brownsville and Port Isabel storage areas would be located in areas of heavy industry.[265] As such, visual receptors in the vicinity of these storage areas would include workers and visitors at nearby industrial/commercial facilities and motorist on nearby roadways.[266] Based on Commission staff's updated environmental justice analysis, and given the location of the storage areas at existing industrial sites, we conclude that impacts on visual receptors, including any individuals from environmental justice communities, would be less than significant.[267]

116. As a result of the use of the Brownsville and Port Isabel offsite locations, individuals from environmental justice communities may experience increases in vehicle-associated noise (loud engines and horns). Based on Commission staff's updated environmental justice analysis, and given the distance to residential areas (three miles from the Brownsville site and 0.3 mile from the Port Isabel site), we conclude that impacts on local residents, including any individuals from environmental justice communities, would be less than significant.

117. As a result of the use of the Brownsville and Port Isabel offsite locations, individuals from environmental justice communities may experience a slight increase in air emissions from vehicles and buses accessing the office site locations. Based on Commission staff's updated environmental justice analysis, and given the distance to residential areas (three miles from the Brownsville site and 0.3 mile from the Port Isabel

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[262] *Id.*

[263] Level of Service is a qualitative measure of traffic flow. There are six levels of service ranging from A to F. LOS A represents the best conditions and LOS F represents the worst conditions. LOS "A" to "C" is considered acceptable. *See* Rio Grande March 13, 2019 Filing at 4.

[264] Rio Grande August 22, 2022 Response to Commission staff's August 16, 2022 Environmental Information Request at 24.

[265] Final EIS at 4-199.

[266] *Id.*

[267] *Id.*

site), we conclude that impacts on local residents, including any individuals from environmental justice communities, would be less than significant.

ii. Rio Grande LNG Terminal

118. For the Rio Grande LNG Terminal, Commission staff determined that a 50-kilometer radius around the approved Rio Grande LNG Terminal site is the appropriate unit of geographic analysis for assessing project impacts on environmental justice communities. This radius for the LNG terminal represents a conservative estimate of the furthest possible extent of impacts, the most distant of which would be associated with air quality impacts.[268] With respect to the Rio Grande LNG Terminal, the air modeling indicates that the radius of impact (i.e., the distance at which a criteria pollutant falls below the defined significant impact level[269]) is approximately 12.8 kilometers.[270]

119. Commission staff identified 286 environmental justice community block groups (out of 293 total block groups) within a 50-kilometer radius of the LNG facility site. Of those 286 block groups, 131 have a minority population that either exceeds 50% or is meaningfully greater than their respective counties, two have a low-income population that is equal to or greater than their respective counties, and 153 have both a minority population and a low-income population that exceed the respective thresholds.[271] Commission staff's following updated analysis of potential LNG terminal impacts associated on the identified environmental justice communities addresses wetlands, recreational fishing, tourism, socioeconomics, traffic, noise, safety, air quality, greenhouse gases, and visual resources.

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[268] Fifty kilometers is the distance used by the EPA for cumulative air modeling for major stationary sources under its Prevention of Significant Deterioration (PSD) air permitting requirements. 40 C.F.R. § 51, app. W (2022), and is generally considered to be the maximum distance that can be accommodated by the assumptions inherent in refined steady-state Gaussian plume air modeling applications.

[269] A modeled result predicting that a proposed source's maximum impact will be below the corresponding significant impact level value may generally be considered to be a sufficient demonstration that the proposed source will not cause or contribute to a violation of the applicable National Ambient Air Quality Standard or Prevention of Significant Deterioration increment.

[270] Rio Grande January 27, 2023 Environmental Information Request Response at 26. Predicted impacts below the significant impact level are not considered by the EPA to have an adverse effect on ambient air quality.

[271] App. B at tbl. 1.

(a) Wetlands

120. Related to wetlands, the final EIS finds that the total impacted wetland area for the Rio Grande LNG Terminal (182.4 acres) represents about 0.28% of the approximately 65,495 acres of wetlands contained within the HUC 12[272] watershed, in which the project is located.[273] The loss of wetland habitat, and the subsequent decrease in wetland benefits (i.e., shoreline and habitat protection for a variety of plant and animal species that can be used for recreation and/or sustenance, and education opportunities), could affect environmental justice communities near the project, particularly the communities located near the LNG terminal in Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1.[274] We note that Rio Grande is required to obtain applicable Army Corps permits for permanent loss of wetland habitat and implement any mitigation measures required by the Army Corps for that loss.[275] All wetlands mitigation for the LNG terminal facilities would take place in the same watershed as the project,[276] located within the Miradores Mitigation site (approximately 11 miles north of the terminal) and the Loma Ecological Preserve (one mile south of the terminal).[277] Based on Commission staff's updated environmental justice analysis for the LNG terminal, we conclude that with the implementation of the mitigation measures discussed in the final EIS and in the Authorization Order, impacts on wetlands would be minimized and mitigated and would not have a significant impact on environmental justice communities.

121. Environmental justice communities in the study area would experience cumulative impacts on wetlands due to impacts previously discussed, along with additional impacts from the project within the cumulative geographic scope for wetlands;[278] however, all impacts will be appropriately mitigated and cumulative impacts with the addition of the

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[272] Bahia Grande-BSC Hydrologic Unit Code (HUC) 12 Watershed.

[273] Final EIS at 4-429.

[274] App. B Fig. 1 to 23.

[275] Final EIS at 4-61.

[276] Rio Grande September 27, 2021 Filing.

[277] Final EIS at 4-68.

[278] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

project would be less than significant.[279] Because all impacts would be appropriately mitigated, we further conclude that the overall cumulative wetland impacts on environmental justice communities would be less than significant.

(b) Recreational and Subsistence Fishing

122. As stated in the final EIS, recreational fishing activities could be affected by construction and operation of the LNG terminal due to increased noise, restrictions on fishing in the immediate vicinity of the LNG terminal, and LNG and barge vessel traffic.[280] Given that a majority of the communities within the study area are considered environmental justice communities, recreational and subsistence fishing users of the area waterbodies, likely include individuals from environmental justice communities, particularly the communities located nearby in Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1. About 1.5 miles of the 17-mile-long shoreline of the channel would be developed for the LNG terminal site.[281] Construction activities at the LNG terminal would not restrict fishing access to bays in the project area or the Gulf of Mexico. Fishing along the eastern bank of the Bahia Grande Channel on the LNG terminal site would be prohibited during construction.[282] Nevertheless, fishing opportunities would still exist along the remainder of the undeveloped channel shoreline, as well as in nearby public areas, including the south end of Bahia Grande.[283] Permanent impacts on recreational and subsistence fishing by individuals from environmental justice communities may occur due to the loss of available fishing areas from operation of the marine facilities and LNG carrier traffic. Based on Commission staff's updated environmental justice analysis, we conclude that recreational and subsistence fishing impacts on environmental justice communities associated with construction and operation of the LNG terminal would occur, but due to the overall size of the waterway and additional available recreational and subsistence fishing opportunities in the area, impacts would not be significant.

123. Environmental justice communities in the study area would experience cumulative impacts on fishing, including recreational and subsistence fishing due to delays for fishing vessels from the project operation and LNG vessel traffic along with additional

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[279] Final EIS at 4-430.

[280] *Id.* at 4-219 to 4-220.

[281] *Id.* at 4-237.

[282] *Id.* at 4-219.

[283] *Id.* at 4-237.

impacts from the project within the cumulative geographic scope for recreational and subsistence fishing;[284] however, impacts with the addition of the project would be less than significant. Due to the overall size of the waterway and additional available recreational and subsistence fishing opportunities in the area, we further conclude that the cumulative recreational and subsistence fishing impacts on environmental justice communities would be less than significant.

(c) Tourism

124. Overall, the final EIS found that construction and operation of the projects could impact local tourism relating to beach and water-front activities; visiting state, local, and national parks; or wildlife viewing. For the Rio Grande LNG Terminal, the final EIS found that construction and operation of the site would impact local tourism through an increase in noise, changes in the visual landscape (including additional vessels and increased sedimentation in the Brownsville Ship Channel), and heavier traffic along SH-48.[285] Although some visual and noise impacts may be experienced by beachgoers, bird-watchers, tour-operators, and other visitors, those impacts are expected to occur only in the immediate vicinity of the LNG terminal site.[286] Given the extent of tourism areas (including birding watching areas, National Wildlife Refuges, National Historic Landmarks, and beaches) and the distance between the recreational portions of the areas and the LNG terminal site, we do not expect that either construction or operation would significantly impact tourism at these locations.[287] Waterborne tourism (e.g., fishing, charter, and tour boats), in portions of South Bay, the Zapata boat launch, and within the Bahia Grande would likely experience moderate increases in ambient noise during certain construction activities at the LNG terminal. Although changes to the visitation patterns immediately adjacent to the LNG terminal could occur, they would not likely change the total number of visits to the general project area. In addition, boaters may experience minor impacts resulting from potential delays in launching fishing, charter, and tour boats during periods of LNG carrier transit.[288]

125. Given the number of tourism opportunities in the project area, tourists may go to other sites so that visitation patterns may change, but the number of visits to the project

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[284] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[285] Final EIS at 4-216.

[286] *Id.*

[287] *Id.* at 4-214 to 4-219.

[288] *Id.* at 4-216.

area would likely not change. Given the availability of recreational opportunities further from the facility sites, the final EIS concluded that a decrease in visits was not anticipated;[289] therefore, based on Commission staff's updated environmental justice analysis, we conclude that impacts on environmental justice communities associated with tourism (e.g., loss of revenue or jobs related to tourism) would not be significant.

126. Environmental justice communities in the study area would experience cumulative impacts on tourism from the LNG terminal project,[290] as previously described, along with additional impacts from the projects within the cumulative geographic scope for tourism;[291] however, tourism impacts with the addition of the project would be less than significant. Given the availability of recreational opportunities further from the LNG terminal facility site, we further conclude that the overall cumulative tourism impacts on environmental justice communities would be less than significant.

(d) Socioeconomics

127. As stated in the final EIS, construction of the Rio Grande LNG Terminal would require an average monthly construction workforce of 2,950 workers (peak of 5,225 workers) over the seven year construction period; Rio Grande anticipates that a portion of these workers would be hired locally and the remainder would be non-local.[292] Rio Grande anticipates that 108 non-local workers would be employed at the LNG terminal during operation. This addition of 108 families would represent a negligible increase in the local population.[293]

128. During construction and operation, the temporary influx of workers/contractors into the area could increase the demand for community services, such as schools, police enforcement, and medical care, as well as housing.[294] As stated in the final EIS, impacts on community services would be less than significant.[295] In addition, an adequate

[289] *Id.* at 4-218 to 4-219.

[290] *Id.* at 4-467.

[291] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[292] Final EIS at 4-207 to 4-208.

[293] *Id.* at 4-227.

[294] *Id.* at 4-226 to 227.

[295] *Id.* at 4-227.

number of housing units are available in the affected area; therefore, impacts on the local housing market would be less than significant.[296] Based on Commission staff's updated environmental justice analysis, we conclude that the socioeconomic impacts on environmental justice communities, due to an increased demand for community services and housing, would be less than significant.

129. Environmental justice communities in the study area would experience cumulative impacts on socioeconomic resources from the LNG terminal project, as previously described, along with additional impacts from the projects within the cumulative geographic scope for socioeconomic resources;[297] however, socioeconomic impacts with the addition of the project would be less than significant.[298] Given that community facilities would continue to operate adequately and the availability of housing units in the affected area, we further conclude that the cumulative socioeconomic impacts on environmental justice communities would be less than significant.

(e) Road Traffic

130. The final EIS finds that area residents may be affected by traffic delays during construction of the Rio Grande LNG Terminal.[299] As all but seven block groups are considered environmental justice communities, these traffic impacts would fall on individuals from environmental justice communities. Up to 5,225 workers would be present onsite during construction of the LNG terminal; Rio Grande has estimated that 4,600 roundtrips (9,200 individual transits) would occur between the LNG terminal site and worker housing/parking areas.[300] Vehicular traffic associated with these workers would result in considerable increases in local traffic, specifically along SH-48.[301] These impacts would most likely affect environmental justice communities near the LNG terminal site, such as Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1.

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[296] *Id.* at 4-225.

[297] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[298] Final EIS at 4-463.

[299] *Id.* at 4-237.

[300] *Id.* at 4-228.

[301] *Id.*

Nevertheless, traffic levels would remain well within the capacity of the SH-48 roadway.[302]

131. Rio Grande's proposed use of the Port of Brownsville Temporary Storage/Parking Area (Census Tract 142.02, Block Group 2) and Port Isabel Temporary Storage Area (Census Tract 123.04, Block Group 4) would reduce traffic to the LNG terminal, and traffic levels would continue to remain well within the capacity of SH-48.[303] In addition, Rio Grande has coordinated with the Texas Department of Transportation and agreed to implement the following mitigation measures: add an additional left-turn lane on westbound SH-48 at its intersections with SH-100 and at each LNG terminal driveway; optimize traffic signal timing at the intersection of SH-48 and SH-100; provide an acceleration and deceleration lane at each LNG terminal driveway intersection; provide temporary traffic signals at each LNG terminal driveway; create median openings across from LNG terminal driveway 1; create a temporary median opening on SH-48 across from any temporary offsite parking site, including the proposed Port of Brownsville temporary storage/parking area, and install a temporary traffic signal; schedule deliveries of construction materials to avoid the expected arrival and departure of the workforce; and stagger shifts to avoid all workers arriving and leaving at the same time, if congestion occurs at the LNG terminal driveways.[304] Additionally, Rio Grande proposed to hire off-duty police officers to direct traffic during peak commuting hours and install roadway warning signs to notify travelers of construction activities.[305] Based on Commission staff's updated environmental justice analysis, and given the maintenance of Level of Service C or better and with the implementation of mitigation measures, we conclude that the traffic impacts on environmental justice communities associated with construction of the LNG terminal would be less than significant.

132. Environmental justice communities in the study area would experience cumulative impacts associated with road traffic from the LNG terminal project, as previously described, along with additional impacts from the projects within the cumulative geographic scope for traffic;[306] however, the impacts with the addition of the project

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[302] *Id.* at 4-228.

[303] Rio Grande August 22, 2022 Response to Commission staff's August 16, 2022 Environmental Information Request at 24.

[304] *Id.* at 26.

[305] *Id.*

[306] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

would be less than significant.[307] Based on Commission staff's updated environmental justice analysis, we conclude that the overall cumulative road traffic impacts on environmental justice communities would be less than significant.

(f) Marine Traffic

133. According to the final EIS, over the seven year construction period for the Rio Grande LNG Terminal, Rio Grande anticipates about 880 barge deliveries for the LNG terminal site, with marine deliveries at the highest level during the first five years of construction (approximately 15 times per month).[308] Although these additional trips would represent an increase of about 25% in current barge traffic, they would not result in significant impacts on the channel, as the barges would not block small vessel traffic, the pilots and the Brownsville Harbor Master would manage commercial vessel traffic, and the additional vessels would not result in an exceedance of the channel's traffic capacity.[309] Therefore, based on Commission staff's updated environmental justice analysis, we conclude that users of the channel from environmental justice communities would not be significantly impacted during construction.

134. According to the final EIS, permanent, increases in marine traffic within the Brownsville Ship Channel would occur as the addition of six LNG carriers per week would double the current volume of large vessel traffic within the Brownsville Ship Channel; however, the U.S. Coast Guard has determined that the waterway is suitable for project use.[310] Additionally, increased LNG vessel traffic during construction and operation could increase shoreline erosion and suspended sediment concentrations due to increased wave action.[311] To minimize these impacts, Rio Grande proposes to stabilize the channel embankments and slope of the LNG terminal site along the Brownsville Ship Channel, the marine loading berths, and the turning basin using rip-rap.[312] Rio Grande's mitigation of these impacts are required by the Commission's authorization. Based on Commission staff's updated environmental justice analysis, we conclude that recreational

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[307] Final EIS at 4-465.

[308] *Id.* at 4-231.

[309] *Id.*

[310] *Id.* at ES-11.

[311] *Id.* at ES-5.

[312] *Id.* at ES-5. Rip-rap is human-placed rock or other material used to protect shoreline structures against scour and water, wave, or ice erosion.

boaters and fishers, which include individuals from environmental justice communities, would not experience significant changes in marine traffic.

135. Environmental justice communities in the study area would experience cumulative impacts associated with marine traffic from the LNG terminal project, as previously described, along with additional impacts from the projects within the cumulative geographic scope for traffic;[313] however, the impacts with the addition of the project would be less than significant.[314] Based on Commission staff's updated environmental justice analysis, we conclude that the overall cumulative marine traffic impacts on environmental justice communities would be less than significant.

(g) Air Quality

136. Sierra Club and Texas RioGrande Legal Aid, Inc. comment that the Commission's new analysis continues to improperly analyze the impacts of the Rio Grande LNG Project on environmental justice communities. Specifically, the commenters argue that: (1) Rio Grande's modeling "arbitrarily applied" the same background concentration within each census block group within the 50 kilometer radius of the Rio Grande LNG Terminal fenceline; (2) Rio Grande improperly used the significant impact level to determine whether a project causes or contributes to exceedances of the NAAQS; (3) the emissions from the Rio Grande facility will have disproportionately high and adverse impacts on environmental justice communities; and (4) the Commission must explain why Rio Grande's maximum modeled concentration tables are "significantly less" than Texas LNG's modeled maximum concentrations, which "defies logic" given the "vast difference" in the quantity of emissions potentially emitted from the respective facilities.[315]

137. Commission staff's January 6, 2023 Environmental Information Request asked Rio Grande and Texas LNG to collaborate to resolve any discrepancies in the modeling and ensure consistency in modeling methodologies used. Rio Grande and Texas LNG have now applied a consistent approach for determining the maximum concentrations attributable to the operation of the Rio Grande LNG Terminal and Texas LNG Terminal, and therefore, a consistent methodology to assess the cumulative air quality impact, including background concentrations from mobile ship emissions and all other sources

[313] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[314] Final EIS at 4-466.

[315] Sierra Club et al. October 19, 2022 Comments.

within 50 kilometers, from simultaneous operation of both terminals.[316] These findings are detailed below.

(1) Construction Emissions

138. As discussed in the final EIS, construction of the Rio Grande LNG Terminal would impact air quality.[317] The construction emissions are anticipated from operation of construction equipment, operation of the onsite concrete batch plants, deliveries of supplies by barge and truck, worker commutes, and land disturbance. Fugitive dust emissions would include contributions from general site construction work (acreage impacted), earth-moving fugitive dust emissions (quantity of soil moved), and unpaved road travel (distance of travel and weight of vehicles). Fugitive dust would be produced primarily during the site preparation activities, when the site would be cleared of debris, leveled, and graded, including at proposed offsite facilities.[318]

139. The final EIS determined that construction air emissions from the LNG terminal, when considered with background concentrations, combined with staged emissions impacts from commissioning, start-up, and operations of the LNG terminal, could result in an exceedance of the NAAQS in the LNG terminal vicinity for construction years when these emissions are taking place concurrently.[319] Emissions from construction tend to be variable, depending primarily on the number, type, horsepower, and manufacture date of equipment, as well as the phase of construction. Construction emissions typically have a greater nearby impact due to the lower height of the exhaust, and the ground level emission from dust (as $PM_{2.5}$ and PM_{10}). Therefore, emissions from construction of the Rio Grande LNG Terminal would be highly localized and have the largest impact within

[316] Rio Grande January 27, 2023 Response to Commission staff's January 6, 2023 Environmental Information Request.

[317] We note that as part of the remand proceeding, Commission staff issued data requests to Rio Grande and Rio Bravo to provide updated construction and operational emission estimates for the Rio Grande LNG Terminal and Rio Bravo Pipeline Project (as amended), respectively. As indicated in these responses, the updates corrected "a mathematical error in a previous calculation." Although these updates have changed the estimated emissions for both projects, we confirm that Kleberg, Jim Wells, Kenedy, Willacy, and Cameron counties, within which the terminal and pipeline construction would occur, remain in attainment for all NAAQS pollutants. Therefore, as the final EIS and Amendment Project EA previously concluded, general conformity requirements do not apply to emissions from the projects' construction.

[318] Final EIS at 4-256 & 4-257.

[319] *Id.* at 4-269.

a short radius around the LNG terminal construction footprint, but would disperse at further distances. Because pollutant concentrations decrease with distance, the dispersal of Rio Grande's construction emissions at the distance of the nearest residences (approximately 2.2 miles away) should not result in adverse impacts on air quality. But construction emissions could be elevated at recreational areas near the LNG terminal site, such as the Laguna Atascosa National Wildlife Refuge, which has a border 211 feet north of the LNG terminal.[320]

140. Rio Grande will implement the following measures to minimize construction combustion emissions: use bus transportation where feasible for worker commutes, limit engine idling of heavy equipment to less than five minutes to the extent practicable, use recent models of construction equipment, and conduct regular inspections and emissions testing of construction vehicles. Fugitive dust emissions will be minimized by Rio Grande through implementation of the Fugitive Dust Control Plan developed for the LNG terminal.[321] Nevertheless, these fugitive dust emissions may still have an adverse impact and may add to evaluated levels of $PM_{2.5}$ and PM_{10} during periods where terminal construction, commissioning, and operation are concurrent. Additionally, commissioning activities are not steady-state operations and they can have an increased emission intensity during start up.

141. Rio Grande plans to commission and begin operations on the first completed liquefaction facilities while it continues to construct the remaining facilities; the simultaneous construction, commissioning and start-up, and operations at the project will result in periods of overlapping construction and operational emissions. As a result, Commission staff cannot exclude the possibility of short-term ambient emission concentrations of $PM_{2.5}$, PM_{10}, and NO_2 at levels above the NAAQS at nearby public recreational areas, such as the Laguna Atascosa National Wildlife Refuge. As such, to prevent such occurrences, we are requiring, in Environmental Condition 144 in Appendix A of this order, that Rio Grande take action to ensure that concurrent emissions during construction, commissioning and start-up, and operation of terminal facilities would not exceed the NAAQS.

142. Prior to commissioning, Rio Grande shall prepare and file a Project Ambient Air Quality Mitigation and Monitoring Plan for reducing the air quality impacts of overlapping construction, commissioning, and terminal operations. Such plan could include measures such as revising construction and commissioning schedules to reduce impacts. Rio Grande shall also include how it will monitor 1-hour NO_2, 24-hour PM_{10}, and 24-hour $PM_{2.5}$ during this period. The plan must describe the site selection process

[320] *Id.* at 4-98.

[321] *Id.* at 4-258 & 4-271.

for installing air quality monitors, and include procedures for data management and reporting. This monitoring will ensure that the mitigation measures implemented are effective in keeping emissions below the NAAQS, as specified in 40 C.F.R. pt. 50 (2022).

143. Based on Commission staff's updated environmental justice analysis, and the addition of Environmental Condition 144 in Appendix A of this order, we conclude that air quality impacts on environmental justice communities during construction of the Rio Grande LNG Terminal would be less than significant.

(2) Operational Emissions

144. The final EIS concluded that modeled concentrations from operation of the Rio Grande LNG Terminal including mobile sources and all six originally proposed liquefaction trains, would not cause or significantly contribute to an exceedance of the NAAQS.[322]

145. On August 13, 2020, the Commission-approved Rio Grande LNG Terminal design modifications including a reduction in the number of liquefaction trains from six to five trains.[323] This modification resulted in a reduction in potential emission rates from the operation of the Rio Grande LNG Terminal, which is discussed in more detail below.

(3) Cumulative Construction and Operation Emissions

146. Sierra Club and other commenters expressed concerns about general adverse health impacts (including asthma) from air emissions from the Rio Grande LNG Terminal and Texas LNG Terminal, including impacts on Vecinos para el Bienestar de la Comunidad Costera. Numerous commenters state that if both terminals were built, each would release toxic pollution that causes cancer, including volatile organic compounds, and particulate matter, which makes respiratory illnesses worse in South Texas communities that don't have access to medical care. An updated refined air quality analysis for the cumulative impact of emissions from the Rio Grande LNG Terminal and Texas LNG Terminal is discussed above.

147. The greatest potential for cumulative construction emissions impacts between the Rio Grande LNG and Texas LNG Terminals would be during construction years 2 and 3. Simultaneous construction of the Rio Grande LNG and Texas LNG Terminals could result in a temporary, moderate to major increase in emissions of criteria pollutants in the

[322] Final EIS at 4-266.

[323] Commission staff August 13, 2020 Approval of Design Change Proposals.

immediate vicinity of the LNG terminal sites.[324] In addition, transport of construction materials associated with the Rio Grande LNG and Texas LNG Terminals would cumulatively add to regional emissions.[325] Both Texas LNG and Rio Grande would implement similar mitigation measures to minimize construction impacts. As noted above, construction emissions are localized, and impacts would be greatest in the immediate vicinity of the LNG terminal sites. During the time period when construction and operational activities at both facilities are taking place concurrently, there may be adverse impacts on air quality.[326] Because pollutant concentrations would decrease with distance from the project site, concurrent emissions would be unlikely to adversely impact air quality in residential areas, which are located 2.2 miles away or further.[327] As previously described, although residential areas would not likely experience adverse air quality impacts, individuals from environmental justice communities fishing or otherwise recreating near the terminal may experience adverse air quality impacts. As discussed above, we are requiring Rio Grande to prepare a Project Ambient Air Quality Monitoring and Mitigation Plan as Environmental Condition 144 in Appendix A of this Order, and a similar plan for Texas LNG; thus, we conclude that cumulative construction air quality impacts on environmental justice communities would be less than significant.

148. In order to assess the cumulative impact of air emissions from the LNG terminal on the air quality in environmental justice communities, Commission staff requested that Rio Grande provide a cumulative air model of the emissions that accounts for the Amendment Project and the elimination of one of the originally proposed six LNG trains, and emissions for existing and currently proposed sources within 50 kilometers of the LNG terminal, including the Texas LNG Terminal. The model, which used the current version of EPA's American Meteorological Society/EPA Regulatory Model (AERMOD), provided worst-case concentration scenarios that were then compared to the NAAQS. The cumulative model included all emissions from the LNG terminal, including mobile ship emissions (LNG carrier, tugs, escort vessels), relevant regional monitoring ambient background data, and existing and proposed regional industrial major sources within 50 kilometers of the LNG terminal's fenceline boundary. The model also included emissions from the planned Texas LNG Terminal (Docket No. CP16-116-000) and its associated vessel emissions. The background inventory data were obtained from the Texas Commission on Environmental Quality.

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[324] Final EIS at 4-473. We note that since issuance of the final EIS, the proposed Annova LNG Project, included in the cumulative impact analysis, is no longer proposed.

[325] *Id.*

[326] *Id.* at 4-269.

[327] *Id.*

149. Table 1 shows the results from the cumulative model for the worst-case scenario (hoteling scenario which includes combined operation of LNG terminal, LNG vessel, and tugboat sources). The highest predicted total concentrations for carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), and sulfur dioxide (SO_2) were found to be below the NAAQS at all locations within 50 kilometers of the LNG terminal. In addition, the maximum radius of impact for the 1-hour NO_2 averaging period was found to be 12.8 kilometers. The Rio Grande LNG Terminal would add to existing background concentrations of criteria air pollutants within the regional airshed and would contribute to cumulative impacts. Nevertheless, the total concentration of background plus modeled emissions from cumulative sources within this 50-kilometer radius, including both the Texas LNG and Rio Grande LNG Terminals, would remain under applicable NAAQS thresholds, which are meant to protect sensitive populations. The Rio Grande LNG Terminal would not result in significant impacts on air quality in the region, nor would the Rio Grande LNG Terminal by itself cause an exceedance of any NAAQS.

Table 1
Results of Cumulative Impact Air Modeling Analysis

Pollutant	Averaging Period	micrograms per cubic meter (µg/m³)					
		Facility Contribution	Offsite Contribution	Model (Facility + Offsite) Concentration	Background Concentration	Total Maximum Model Design Concentration within any Census Block Group	NAAQS
CO	1-hour	0.0213	4,304	4,304	3,779	8,083	40,000
	8-hour	0.018	2,792	2,792	2,176	4,968	10,000
NO_2	1-hour	0.002	106.62	106.62	47.0	153.62	188
	Annual	0.077	2.58	2.66	3.8	6.46	100
PM_{10}	24-hour	0.00091	47.59	47.59	60.0	109.59	150
$PM_{2.5}$	24-hour	0.00054	6.33	6.33	28.0	34.33	35
	Annual	0.0071	2.16	2.17	9.7	11.87	12
SO_2	1-hour	0.0011	102.63	102.63	13.1	115.73	196
	3-hour	0.0011	87.98	87.99	13.1	101.09	1,300

150. To account for the Rio Grande LNG Terminal's current design, Rio Grande performed ozone modeling to update the results presented in the final EIS.[328] Rio Grande calculated secondary impacts using updated estimated ozone emissions from the

[328] Rio Grande November 2, 2022 Supplemental Information Response to Commission staff's August 16, 2022 Environmental Information Request.

Rio Grande LNG Terminal following EPA's current Modeled Emission Rates for Precursors guidance and associated databases and estimated the ozone concentration associated with the operation of the Rio Grande LNG Terminal to be 1.62 parts per billion (ppb). Following Texas Commission on Environmental Quality guidance, this estimated impact was added to the existing background ozone concentration of 57 ppb, measured at the Harlingen Teege air monitoring station for the years 2018, 2019, and 2020, which is representative of the Rio Grande LNG Terminal area.[329] When the estimated project impact of 1.62 ppb is added to the existing ozone concentrations, the cumulative impact is 58.6 ppb, which remains below the 8-hour ozone NAAQS of 70 ppb.

151. Both the Texas LNG and Rio Grande LNG Terminals would be in compliance with the NAAQS during operations[330] and NAAQS are designated to protect sensitive populations.[331] The operation of the LNG terminal projects when combined with the other projects within the cumulative geographic scope for air quality[332] would not cause or contribute to a potential exceedance of the NAAQS on a regional or localized basis,[333]

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[329] *Id.*

[330] Air quality modeling of criteria pollutants for both LNG terminals reviewed impacts on a regional and local scale and did not identify any areas of NAAQS thresholds exceedance that would be attributable to the LNG terminals. *See* Rio Grande January 27, 2023 Response to Commission staff's January 6, 2023 Environmental Information Request at Rio Grande LNG Project Air Dispersion Modeling Report; Texas LNG January 30, 2023 Response to Commission staff's January 6, 2023 Environmental Information Request at tbls. 9-5 & 9-6.

[331] The combustion of natural gas produces the criteria pollutants regulated by NAAQS as well as volatile organic compounds including hazardous air pollutant chemicals known to cause health impacts. Final EIS at 4-243. The Rio Grande LNG Terminal is a major source of hazardous air pollutants and must comply with the Clean Air Act National Emission Standards for Hazardous Air Pollutants for stationary sources at the LNG terminal. The Texas LNG terminal is a minor source of hazardous air pollutants and is required to comply with certain general provisions for minor area sources under the Clean Air Act.

[332] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[333] *See* Rio Grande January 27, 2023 Response to Commission staff's January 6, 2023 Environmental Information Request at Rio Grande LNG Project Air Dispersion Modeling Report; Texas LNG January 30, 2023 Response to Commission staff's January 6, 2023 Environmental Information Request at tbls. 9-5 & 9-6.

and therefore would not result in significant adverse air quality impacts on environmental justice communities in the region.

(h) Noise

152. As stated in the final EIS, noise levels above ambient conditions, attributable to construction activities, would vary over time and would depend upon the nature of the construction activity, the number and type of equipment operating, and the distance between sources and receptors.[334] The closest noise sensitive areas (NSA) to the Rio Grande LNG Terminal located within environmental justice communities are: NSA 1, a residence, about 4.3 miles southeast of the center of the LNG terminal site (Census Tract 127 Block Group 2); NSA 2, Port Isabel High School, which is adjacent to the Laguna Heights residential area, located about 3.7 miles northeast of the center of the LNG terminal site (Census Tract 123.04, Block Group 4); NSA 3, residences in Port Isabel, about 3.7 miles northeast of the LNG terminal site (Census Tract 123.04 Block Group 4); and NSA 4, residences on Long Island, about 3.8 miles east of the center of the LNG terminal site (Census Tract 123.05 Block Group 1). [335]

153. Based upon the construction noise estimates provided by Rio Grande, the maximum noise levels generated by construction activities would increase the existing daytime noise at the nearest NSAs; however, with the exception of construction at NSA 2, combined ambient and construction sound levels would not exceed a day-night sound level (L_{dn}) threshold of 55 A-weighted decibels (dBA).[336] The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear; and 10 dBA is perceived as a doubling of noise.[337] The increased sound from construction at NSA 2 would be less than 3 dB, and therefore would not be perceptible. The final EIS included a recommendation (which was included as a mandatory condition of the Authorization Order) to address the potential for pile-driving activities to exceed the 55 dBA L_{dn} threshold at the NSAs.[338] Nevertheless, due to the predicted 0.2 to 5.4 dB increases estimated during construction, the final EIS

[334] Final EIS at 4-282.

[335] *Id.* at 4-197.

[336] *Id.* at 4-292.

[337] *See* Bies and Hansen, *Engineering Noise Control: Theory and Practice* at tbl. 2.1 (1988), https://www.semanticscholar.org/paper/ENGINEERING-NOISE-CONTROL%3A-Theory-and-Practice-Bies-Hansen/23a7741e61d5b42d7da770b857054a50f1380648 (last visited March 2023).

[338] Final EIS at 4-292.

concluded that impacts on nearby residents within environmental justice communities would be less than significant during construction of the LNG terminal.[339]

154. Operational noise associated with the LNG terminal would be persistent and would increase noise levels over ambient between 0.1 and 0.4 dB at the closest NSAs.[340] Based on these estimates, the noise generated by the operation of the LNG terminal is not likely to exceed the 3 dBA threshold for human perception of noise change at nearby NSAs within environmental justice communities. In addition, as recommended in the final EIS,[341] Environmental Conditions 35, 36, and 37 in the Authorization Order require Rio Grande to meet sound level requirements. Based on Commission staff's updated environmental justice analysis, Rio Grande's estimate that operation of the LNG terminal will not result in a perceptible increase in sound levels at the nearest NSAs, and given the requirements in the Authorization Order for measurement of operational sound levels, we conclude that the project would not result in significant noise impacts on local residents and the surrounding communities,[342] including environmental justice populations.

155. Environmental justice communities in the study area would experience cumulative impacts associated with noise from the Rio Grande LNG Terminal, as previously described, along with additional impacts from the projects within the cumulative geographic scope for noise, particularly cumulative impacts related to construction of the Texas LNG Terminal.[343] The construction and operation of the Rio Grande LNG Terminal and Texas LNG Terminal would not result in significant noise impacts on local residents and the surrounding communities, including environmental justice populations. As stated in the final EIS regarding nighttime construction noise, the only 24-hour construction proposed at the Rio Grande LNG Terminal would be dredging, and concluded that the estimated sound level from dredging associated with the Rio Grande LNG Terminal at the nearest NSAs would be below existing ambient sound levels, and noise associated with dredging activities is not expected to be perceptible.[344] The final

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[339] *Id.*

[340] *Id.* at 4-293.

[341] *Id.* at 5-31 to 5-32.

[342] *Id.* at 4-296.

[343] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[344] We note that the final EIS found that the Annova LNG Project's nighttime pile-driving would result in significantly higher noise levels resulting in significant cumulative noise impacts if the Annova LNG Project was constructed concurrent with the Rio Grande LNG Terminal's nighttime dredging activities. Nevertheless, as noted above,

EIS determined that the predicted sound level impacts for simultaneous operation of all three LNG projects (Rio Grande LNG, Texas LNG, and Annova LNG) are much lower than the construction impacts, with potential sound level increases between 0.3 and 1.5 dBA L_{dn} at NSAs, resulting in a negligible to minor cumulative impact. Based on Commission staff's updated environmental justice analysis, we conclude that the overall cumulative noise impacts on environmental justice communities would be less than significant.

(i) Safety

156. The Energy Policy Act of 2005 amended the NGA to require Emergency Response Plans and Cost Sharing Plans to be developed by the LNG terminal operator. During an incident, response decisions would be made by local emergency responders according to conditions as they exist at that time at the facility and in offsite areas. While the company may provide advice regarding hazards and potential impacts to the public, the emergency responders direct all response tactics, evacuation, sheltering in place, and public notification through an Incident Command System.

157. In order to further mitigate potential offsite risks,[345] Environmental Conditions 53 and 54 of the Authorization Order require Rio Grande to prepare an Emergency Response Plan and Cost Sharing Plan,[346] to be approved by Commission staff before Rio Grande may receive final approval to begin construction.[347] Rio Grande's Emergency Response

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the authorization for the Annova LNG Project has been vacated, and the Rio Grande LNG Terminal's contribution to cumulative nighttime construction noise would be negligible.

[345] The Emergency Response Plans are considered the last layer of protection in a series of layers of protection evaluated by Commission staff to mitigate potential offsite risks. An evaluation of all layers of protection and recommendations to enhance the effectiveness and reliability of those safety layers of protection are described in the original final EIS. These recommendations were adopted as conditions in the Authorization Order.

[346] Rio Grande filed an initial Emergency Response Plan and Cost Sharing Plan on November 25, 2019, and responses to Commission staff's data requests on January 22, 2020, January 27, 2020, and February 14, 2020. In addition, Rio Grande filed updates to the Emergency Response Plan on February 20, 2021, November 19, 2021, and May 20, 2022. These updates included administrative updates, emergency contact updates, language and figure revisions that incorporate terminal layout updates, cost-sharing plan development updates, and public education and notification materials updates.

[347] *See* 15 U.S.C. § 717b-1(e).

Plan is required to be developed in coordination with U.S. Coast Guard, state, county, and local emergency planning groups; fire departments; and state and local law enforcement. This ensures that Rio Grande works with the local emergency providers to identify resource needs based on the hazards that could be present due to the facility. The result is pre-incident planning to establish procedures, training, and capabilities that would be available to the Incident Commander as they decide how best to address a specific incident.

158. In response to Commission staff's data requests on potential safety impacts to environmental justice communities, Rio Grande evaluated potential impacts from incidents identified along the LNG marine vessel transit route and at the LNG terminal,[348] including potential impacts to individuals with access and functional needs as defined in the National Fire Protection Association (NFPA) 1600, Standard on Continuity, Emergency, and Crisis Management[349] and NFPA 1616, Standard on Mass Evacuation, Sheltering, and Re-Entry Programs.[350] Separately, Commission staff performed an independent analysis[351] of potential safety impacts on environmental justice communities using conservative, worst-case distances in the modeling assumptions.[352] We adopt the proposed modified conditions in Appendix A as conditions of this order, which are summarized below.

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[348] Rio Grande August 22, 2022 Response to Commission staff's August 16, 2022 Environmental Information Request.

[349] NFPA, *NFPA 1600: Standard on Continuity, Emergency, and Crisis Management*, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1600 (last visited Jan. 2023).

[350] NFPA, *NFPA 1616: Standard on Mass Evacuation, Sheltering, and Re-Entry Programs*, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1616 (last visited Jan. 2023).

[351] *See* app. C for additional discussion and details on Commission staff's environmental justice safety analysis.

[352] The block groups located within environmental justice communities that exceed the thresholds for minority and low income would include Census Tract 142.02 Block Group 2, Census Tract 127 Block Group 2, Census Tract 123.04 Block Group 2, Census Tract 123.04 Block Group 4 (based on the minority and low-income thresholds); Census Tract 123.04 Block Group 3 (based on the minority threshold); and Census Tract 123.04 Block Group 1 (based on low-income threshold). Minority and low-income population percentages for these Census Tract Block Groups are provided in tbl. C.1 of Appendix C.

159. In order to ensure Rio Grande's Emergency Response Plan incorporates any special considerations and pre-incident planning for infrastructure and public with access and functional needs, including environmental justice communities, and, at a minimum, be consistent with the recognized and generally accepted good engineering practices for evacuating and sheltering in place,[353] we modify Environmental Conditions 53 and 54 from the Authorization Order in Appendix A of this order. These modified conditions specify that Rio Grande's Emergency Response Plan include public education material, including for environmental justice communities, that identifies potential hazards and impacts, steps for notification, proposed evacuation, routes, and shelter in place locations. The plan must also provide for first responder training, emergency command centers and equipment, and public communication methods and devices.[354] We also require in Appendix A of this order that Rio Grande periodically disseminate public education materials and that they be made available in English and Spanish, consistent with Rio Grande's proposal.[355]

160. We also clarify our expectation that certain Emergency Response Plan information be provided as public information. While the Commission has long required that certain plan contents be subject to public disclosure, this has been previously interpreted to mean the plan could be filed requesting privileged or CEII treatment and that the public could access this information through Freedom of Information Act procedures. We clarify the intent is for project sponsors to file certain Emergency Response Plan information as public so that surrounding communities are informed about the possible steps that an Incident Commander may require regarding notification, evacuation, and sheltering in place.

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[353] *See* app. C (citing NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470, and NFPA 475).

[354] A draft pamphlet was included in Rio Grande's May 20, 2022 filing and provides information on LNG hazards, response planning, communication methods, evacuation routes, and shelter/muster locations should an evacuation be necessary. In compliance with the Authorization Order, Rio Grande continues to notify Commission staff of all planning meetings in advance and to report progress on the development of the Emergency Response Plan and Cost Sharing Plan at 3-month intervals.

[355] Rio Grande's May 20, 2022 and September 15, 2022 responses to Commission staff data requests state that Rio Grande continues to develop and finalize its community outreach and emergency response pamphlet and once complete, the final pamphlet would be available to the public in English and Spanish.

(j) Visual Impacts

161. As stated in the final EIS, impacts on visual resources may occur during construction of the Rio Grande LNG Terminal when large equipment, excavation activities, spoil piles, and construction materials are visible to local residents and visitors, including individuals from environmental justice communities,[356] particularly the communities located nearby in Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1.

162. Impact on visual resources would also occur during operation to the extent that facilities or portions of facilities and their lighting are visible to residents and visitors.[357] The existing viewshed of the proposed LNG terminal site includes predominately open land with scrub-shrub vegetation with the Brownsville Ship Channel and SH-48 framing the southern and northern site boundaries.[358] The Port of Brownsville and the Brownsville Ship Channel support the movement of domestic and foreign products, which included about 7.6 million metric tons of cargo with over 1,050 vessel-calls in 2014.[359] As such, the movement of these vessels contributes to the characterization of the existing viewshed.[360] Visual receptors in the vicinity of the LNG terminal site would include individuals from environmental justice communities, particularly the communities located nearby in Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1, including recreational and commercial users of the Brownsville Ship Channel, motorists on SH-48, and visitors to the Laguna Atascosa National Wildlife Refuge, and other nearby recreation areas.[361] The closest residential areas to the LNG terminal within an environmental justice community are about 2.2 miles away from the Rio Grande LNG Terminal lease boundary. Given the LNG terminal site's proximity to residential areas, it would be possible to see the LNG terminal from some vantage points in Port Isabel and Laguna Heights, in particular elevated sites such as the Port Isabel Lighthouse; however, the distance to the LNG terminal site limits its

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[356] Final EIS at 4-198.

[357] *Id.*

[358] *Id.*

[359] *Id.*

[360] *Id.*

[361] *Id.* at 4-198 to 4-199.

visibility and as such it would not be a prominent feature in the viewshed for these residences.[362]

163. Rio Grande has developed mitigation measures that would reduce day and nighttime visibility of the aboveground facilities at the LNG terminal site, including the selection of grey tank coloring, horticultural plantings, and the construction of a levee that would obstruct most construction activities and low-to-ground operational facilities from view.[363] Several light reduction techniques would also be implemented by Rio Grande including limiting the amount of outdoor lighting installed, dimming lights at night, and directing lights downward.[364] Based on Commission staff's updated environmental justice analysis, we continue to conclude that the LNG terminal project would not result in a significant impact on visual resources for residents and visitors in the immediate vicinity of the proposed LNG terminal site,[365] which would include individuals from environmental justice communities. With regard to cumulative visual impacts, as stated in the final EIS, the physical facilities of the Rio Grande LNG Terminal would result in permanent and moderate changes in the existing viewshed for people when they are near the terminal.[366] This includes individuals from environmental justice communities recreating near the Rio Grande LNG Terminal (e.g., Laguna Atascosa National Wildlife Refuges) as well as passersby traveling on SH-48. The final EIS concluded because the Texas LNG Terminal has the potential to result in significant visual impacts, that cumulative impacts on visual resources from the Rio Grande LNG Terminal, when considered with other projects, would be potentially significant.[367] We have taken into account Commission staff's updated environmental justice analysis, and we continue to conclude, cumulative impacts on visual resources, when considered with other projects within the cumulative geographic scope for visual resources, would be potentially significant.[368]

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[362] Final EIS at 4-199.

[363] *Id.*

[364] *Id.* at 4-199 to 4-200.

[365] *Id.* at 4-202.

[366] *Id.* at 4-459.

[367] *Id.* at 4-459.

[368] We continue to reach this conclusion notwithstanding the fact that the cancelled Annova LNG project is no longer included in the cumulative analysis.

b. Rio Bravo Pipeline Project

i. Compressor Station, Meter Stations, and Contractor Yards

164. Commission staff's updated analysis of impacts associated with Compressor Station 1, the meter stations and the contractor yards on the identified environmental justice communities addresses visual resources, air quality, and noise. Socioeconomic and traffic impacts associated with the meter stations and the contractor yards and pipeline are addressed in sections ii (e) and (f) below. No wetland, surface water, or recreational fishing impacts are associated with the meter stations and contractor yards. Cumulative impacts are discussed in section ii below.

(a) Aboveground Facility Impact Assessment Areas

(1) Compressor Station

165. For the Rio Bravo Pipeline Project, Commission staff established a 50-kilometer radius around Compressor Station 1, located in Kleberg County, as the appropriate unit of geographic analysis for assessing project impacts on environmental justice communities. A 50-kilometer radius for Compressor Station 1 represents a conservative estimate of the furthest extent of likely construction and operational impacts on environmental justice communities, the furthest of which, as described below, would be associated with noise, estimated to not exceed one mile,[369] and air quality, for which the furthest radius of impact for air quality is approximately 0.6 mile (1kilometer for this facility).[370] Air

[369] The Guidance Manual for Environmental Report preparation requires an acoustical analysis identifying noise impacts from each new or modified compressor station within 1 mile of the compressor station. Commission Guidance Manual for Environmental Report Preparation for Applications Filed Under the Natural Gas Act at 4-132. The nearest noise sensitive area, a hunting lodge, is 5.5 miles to the west of Compressor Station 1. Amendment Application, Volume I at app. 2.B (*Rio Bravo Compressor Station, Kleberg County, Texas: Results of an Updated Acoustical Analysis of the new Natural Gas Compressor Station associated with the Amended Rio Bravo Pipeline Project*). Compressor Station's noise contribution at one mile would be approximately 42 A-weighted decibels (dBA), and would remain in compliance with the Commission's day-night sound level requirement of 55 dBA. Authorization Order, 169 FERC ¶ 61,131 at Env't Condition No. 38.

[370] Amendment Application, Volume I at 17 (Operation Impacts). In addition to emissions levels, factors that determine the radius of impact for a particular facility

emissions may further disperse outside this radius of impact; however, beyond the radius of impact, air emissions from Compressor Station 1[371] would not contribute to adverse ambient air quality impacts and would be below the NAAQS.[372] Commission staff identified 87 environmental justice community block groups within 50 kilometers of Compressor Station 1. Of those 87 environmental justice community block groups, 40 have a minority population that either exceeds 50% or is meaningfully greater than their respective counties, one has a low-income population that exceeds the threshold, and 46 have both a minority population and a low-income population that exceed the respective thresholds.[373]

(2) Meter Stations

166. For the three meter stations located in Kleberg County (Meter Stations HS1, HS2, and HS3), and Meter Station HS4 located in Jim Wells County, a one-mile radius around the meter station sites is sufficient given construction and operational impacts on environmental justice communities. Commission staff determined that a one-mile radius for the meter stations represents a conservative estimate of the furthest extent of impacts on environmental justice communities, the furthest of which would be associated with noise impacts.[374] For Meter Stations HS1 and HS2 in Kleberg County, Commission staff did not identify environmental justice communities within the one-mile radius of analysis. Meter Station HS3 (Kleberg County) is not located within an environmental justice block group; Commission staff identified one environmental justice community block group within a one-mile radius of the site (Census Tract 9502.02, Block Group 2). Meter Station HS4, in Jim Wells County, is located within an environmental justice community (Census Tract 9502.02, Block Group 2). The one block group identified

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include the surrounding topography, atmospheric patterns, stack height, and the temperature and velocity of the flue gas.

[371] The modified Compressor Station 1 would consist of four 43,000-hp natural gas-driven turbines, two 55,000-hp electric motor-driven compressor units, one natural gas-driven fuel heater, and two natural gas-fired backup generators, and other ancillary facilities.

[372] Enbridge Rio Bravo Pipeline Company, LLC Environmental Report, Volume I, Section 2.1.5.2.3 Operational Impacts, *Revised FEIS Table 4.11.1-17 Summary of Air Dispersion Modeling at Compressor Station 1 and Comparison to NAAQS*.

[373] *See* app. B at tbl. 2.

[374] Final EIS at 4-301.

within the radius of analysis for Meter Station HS4 has a minority population that either exceeds 50% or is meaningfully greater than Jim Wells County.[375]

(3) Contractor Yards

167. For the three contractor yards associated with the Rio Bravo Pipeline Project, Commission staff determined that a 1-mile radius around the project sites is sufficient given construction and operational impacts on environmental justice communities. A one-mile radius for the contractor yards represents a conservative estimate of the furthest extent of impacts on environmental justice communities, the furthest of which would be associated with traffic impacts.

168. Contractor Yards 1, 2, and 3 are proposed for use by Rio Bravo during construction only and are located within environmental justice communities (Census Tract 9503, Block Group 1, Census Tract 9501, Block Group 1, and Census Tract 144.01, Block Group 1, respectively). For the Contractor Yard 1, Commission staff identified four environmental justice community block groups within a one-mile radius of the site (two based on both the minority threshold and 2 based on both the low income and minority thresholds). For the Contractor Yard 2, Commission staff identified one environmental justice community block groups within a one-mile radius of the site (based on both the low income and minority threshold). For the Contractor Yard 3, Commission staff identified seven environmental justice community block groups within a one-mile radius of the site (five based on both the minority threshold and 2 based on both the low income and minority thresholds).

(b) Visual Resources

169. Compressor Station 1 would not be constructed within an environmental justice community; however, environmental justice communities are located within 50 kilometers of the facility. Compressor Station 1 would not be visible from the closest NSA within an environmental justice community, approximately 5.5 miles away. Therefore, no visual impacts on environmental justice communities are anticipated.

170. As previously mentioned, Rio Bravo will construct and operate two meter stations within environmental justice communities. One of the meter stations will be a standalone facility along the pipeline Header System in Jim Wells County, Texas. The other will be a gas custody transfer meter station collocated at the Rio Grande LNG Terminal in Cameron County, Texas. The meter station collocated at the Rio Grande LNG Terminal will be part of the terminal viewshed and not a predominant feature on the LNG terminal site. The meter station along the pipeline Header System in Jim Wells County will be constructed on large parcels of land consisting mostly of open land and agricultural land.

[375] *See* app. B at tbl. 3.

This land also contains numerous easements for oil and gas pipelines. Therefore, the existing viewshed is characterized, in part, by existing infrastructure associated with these systems.

171. Rio Bravo's three construction contractor yards are located in environmental justice communities, and the closest residences to Contractor Yard 1 (189 feet north) may experience a change in viewshed during construction, which would be temporary lasting the duration of construction. No visual impacts are anticipated for Contractor Yards 2 and 3 (2,065 feet south and 3,044 feet south, respectively) due to the distance from those residences.

(c) Air Quality

172. Construction of Compressor Station 1, Meter Stations HS3 and HS4, and use of the three contractor yards would result in a temporary increase in emissions due to the combustion of fuel in vehicles and equipment, and dust generated from general construction activities. Construction emissions associated with Compressor Station 1 and meter station construction would be minimal and localized to the construction area. Therefore, based on Commission staff's updated environmental justice analysis, we conclude that environmental justice communities would not experience significant air quality impacts during construction of the pipeline facilities.

173. Operations emissions associated with Compressor Station 1 would not cause an exceedance of the NAAQS. In addition, the radius of impact for Compressor Station 1 is approximately 0.6 mile (1 kilometer) for this facility and would not contribute to adverse ambient air quality in any environmental justice communities. Outside this radius, Commission staff determined that the project would not contribute to adverse ambient air quality impacts. Therefore, based on Commission staff's updated environmental justice analysis, we conclude that operation emissions associated with Compressor Station 1 would not result in a significant impact on air quality in environmental justice communities.

174. Operations emissions associated with Meter Stations HS3 and HS4 would be due to fugitive emissions and natural gas venting and would result in minimal emissions of criteria pollutants. Operations emissions associated with these facilities would not cause an exceedance of the NAAQS. The three contractor yards would not be used during operation. Therefore, based on Commission staff's updated environmental justice analysis, we conclude that operation emissions associated with Meter Stations HS3 and HS4 would not result in a significant impact on air quality in environmental justice communities.

175. Operation of Rio Bravo project aboveground facilities would not cause a NAAQS exceedance, and concurrent operations associated with other projects within the

geographic scope for air quality are not expected to result in a NAAQS exceedance.[376] Environmental justice communities in the study area would experience cumulative impacts on air quality due to impacts previously discussed along with additional impacts from the projects within the cumulative geographic scope for air quality; however, impacts with the addition of the project would be less than significant.[377] Therefore, overall cumulative air quality impacts on environmental justice communities would be less than significant.

(d) Noise

176. There are no residences or other NSAs within 1 mile of the meter station within Jim Wells County or Compressor Station 1. Therefore, based on Commission staff's updated environmental justice analysis, we conclude that no construction or operational noise impacts on residences within environmental justice communities would be anticipated from these facilities, as any noise impacts would not likely be perceptible at these distances.[378]

177. Sound levels resulting from construction equipment at the contractor yards would vary over time and would depend upon the number and types of equipment operating, the level of operation, and the distance between sources and receptors.[379] Construction equipment would be operated on an as-needed basis, and environmental justice communities near the construction contractor yard areas may experience an increase in perceptible noise, but the effect would be temporary and local.[380] The closest residences to Contractor Yard 1 (189 feet north) may experience noise during construction, which would be temporary lasting the duration of construction. No noise impacts are anticipated for Contractor Yards 2 and 3 (2,065 feet south and 3,044 feet south, respectively) due to the distance to the closest residences.

ii. Rio Bravo Pipeline

178. Finally, for the dual pipeline system itself, Commission staff identified the census block groups crossed by the pipelines as the appropriate units of geographic analysis for assessing the facilities' impacts on environmental justice communities because impacts

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[376] Final EIS at 4-478 to 4-479.

[377] *Id.* at 4-479.

[378] *Id.* at 4-301.

[379] *Id.* at 4-296.

[380] *Id.*

related to noise, visual, traffic, and air emissions from construction and operation of the pipelines would be localized such that an expanded radius is not warranted.

179. For the Rio Bravo Pipeline Project, as proposed in Rio Bravo's Amendment Project application and approved herein, Commission staff identified 14 environmental justice community block groups crossed by the pipelines. Of those 14 environmental justice community block groups, seven have a minority population that either exceeds 50% or is meaningfully greater than their respective counties and seven have both a minority population and a low-income population that exceed the respective thresholds.[381]

180. Commission staff's following updated analysis of pipeline impacts on the identified environmental justice communities addresses wetlands, surface water, recreational fishing, tourism, socioeconomics, traffic, noise, air quality, and visual resources.

(a) Wetlands

181. The final EIS finds that the total impacted wetland area for the pipeline facilities (107.3 acres) represents about 0.16% of the approximately 65,495 acres of wetlands contained within the HUC 12[382] watershed, in which the Rio Bravo Pipeline Project is located.[383] Rio Bravo would be required to implement the conditions of its CWA section 404 permit and section 401 water quality certification to mitigate for wetland impacts.

182. All mitigation for the LNG terminal and the pipeline's facilities would take place in the same watersheds,[384] located within the Miradores Mitigation site (approximately 11 miles north of the terminal) and the Loma Ecological Preserve (one mile south of the terminal).[385] Based on Commission staff's updated environmental justice analysis, we conclude that with the implementation of these mitigation measures, impacts on wetlands would be minimized and would not have a significant impact on environmental justice communities.

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[381] *See* app. B at tbl. 3.

[382] Bahia Grande-BSC Hydrologic Unit Code (HUC) 12 Watershed.

[383] Final EIS at 4-429.

[384] Rio Grande September 27, 2021 Filing.

[385] Final EIS at 4-68.

183. Environmental justice communities in the study area would experience cumulative impacts on wetlands due to impacts previously discussed, along with additional impacts from the projects within the cumulative geographic scope for wetlands;[386] however, impacts with the addition of the project would be less than significant.[387] Because all impacts would be appropriately mitigated, we further conclude that the overall cumulative wetland impacts on environmental justice communities would be less than significant.

(b) Recreational and Subsistence Fishing

184. Regarding the Rio Bravo Pipeline Project, sights and sounds from the pipeline construction activities may be a nuisance to people fishing in the project vicinity, including at the Zapata boat launch, but construction would not prohibit visitors from using these areas.[388] In general, impacts of construction of the pipeline project on recreational fishing would be temporary and limited to the period of active construction, which typically would last several days to several weeks in any one area, with the exception of the Zapata boat launch, which would be crossed by an HDD that could last up to 10 weeks.[389] Known or designated fishing areas are not known to occur in the inland river and streams that are crossed by the pipeline facilities. Based on Commission staff's updated environmental justice analysis, we conclude that due to the temporary nature of impacts associated with pipeline construction and the limited adverse impact on recreational and subsistence fishing, recreational and subsistence fishing impacts on environmental justice communities associated with construction and operation of the pipeline project would not be significant.

(c) Tourism

185. Recreational areas that draw nature-oriented tourists would be crossed by the pipelines, including the Great Texas Coastal Birding Trails, a National Historic Landmark (King Ranch), the Zapata boat launch, and BND land subject to a wildlife crossing conservation easement.[390] The Lower Rio Grande Valley and Laguna Atascosa

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[386] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[387] Final EIS at 4-430.

[388] *Id.* at 4-220.

[389] *Id.*

[390] *Id.* at 4-218.

National Wildlife Refuges would be less than 0.25 mile from the pipeline project.[391] Although pipeline construction would not prohibit visitors from using recreational areas, sights and sounds of pipeline construction activities may be a nuisance to visiting tourists, and could generally interfere with or diminish the quality of their experience by affecting wildlife movement.[392]

186. Given the number of tourism opportunities in the project area, tourists may go to other sites so that visitation patterns may change, but the number of visits to the project area would likely not. Given the availability of recreational opportunities further from the pipeline facility sites, the final EIS concluded that a decrease in visits would not be anticipated;[393] therefore, based on Commission staff's updated environmental justice analysis which also considers the Amendment Project EA, we conclude that impacts on environmental justice communities associated with tourism (e.g., loss of revenue or jobs related to tourism) would not be significant.

187. Environmental justice communities in the study area would experience cumulative impacts on tourism from the Rio Bravo Pipeline Project,[394] as previously described, along with additional impacts from the projects within the cumulative geographic scope for tourism;[395] however, impacts with the addition of the project would be less than significant.[396] Given the availability of recreational opportunities further from the facility sites, we further conclude that the overall cumulative tourism impacts on environmental justice communities would be less than significant.

(d) Socioeconomics

188. Construction of the Rio Bravo Pipeline Project facilities would require an average workforce of between 760 and 1,240 workers (peak of 1,500 workers) over two, non-consecutive 12-month periods, of which a majority would be non-local.[397] For

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[391] *Id.*

[392] *Id.* at 4-218.

[393] Final EIS at 4-218 to 4-219.

[394] *Id.* at 4-467.

[395] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[396] Final EIS at 4-467.

[397] *Id.* at 4-209.

the pipeline facilities, 20 new permanent positions would be added during operation, which would represent a negligible increase in the local population.[398]

189. During construction and operation of the Rio Bravo Pipeline Project, the temporary influx of workers/contractors into the area could increase the demand for community services, such as schools, police enforcement, and medical care as well as housing.[399] As stated in the final EIS, as supplement by the Amendment Project EA, impacts on community services would be less than significant.[400] In addition, an adequate number of housing units are available in the affected area; therefore, impacts on the local housing market would be less than significant.[401] Based on Commission staff's updated environmental justice analysis, we conclude that the socioeconomic impacts on environmental justice communities, due to an increased demand for community services and housing, would be less than significant.

190. Environmental justice communities in the study area would experience cumulative impacts on socioeconomic resources from the Rio Bravo Pipeline Project, as previously described, along with additional impacts from the projects within the cumulative geographic scope for socioeconomic resources; [402] however, impacts with the addition of the project would be less than significant.[403] Given that community facilities would continue to operate adequately and the availability of housing units in the affected area, we further conclude that the cumulative socioeconomic impacts on environmental justice communities would be less than significant.

(e) Road Traffic

191. Construction of the Rio Bravo Pipeline Project facilities, including Compressor Station 1, Meter Stations HS4 and HS3, and the contractor yards, may temporarily affect roadway traffic due to increased vehicle traffic associated with construction workforce

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[398] *Id.* at 4-227.

[399] *Id.* at 4-226 to 227.

[400] *Id.* at 4-227.

[401] *Id.* at 4-225.

[402] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[403] Final EIS at 4-463.

commutes and the delivery of equipment and materials to the construction work area,[404] which would occur in numerous environmental justice communities.[405] To minimize impacts on traffic, Rio Bravo would provide adequate parking for workers to ensure that parking on the shoulders of major roads is avoided and install warning signs on roadways to notify travelers of construction activities.[406] If traffic congestion occurs during construction, Rio Bravo would consider implementing additional measures, including, but not limited to, scheduling truck deliveries between peak commuting times, re-routing truck traffic to avoid busy roadways, and implementing temporary traffic signals.[407] Rio Bravo will also file traffic mitigation procedures, developed in consultation with applicable transportation authorities, to maintain a Level of Service of C or better on roadways proposed for use during construction of the pipeline project.[408] Based on Commission staff's updated environmental justice analysis, and given the maintenance of Level of Service C or better and with the implementation of mitigation measures, we conclude that the traffic impacts on environmental justice communities associated with construction of the pipeline project would be less than significant. Only a small number of permanent workers would be hired to operate the Rio Bravo Pipeline Project facilities and no measurable traffic increase would take place during operation.[409] Therefore, traffic impacts on environmental justice communities associated with operation of the pipeline project would be less than significant.

192. Communities in the study area would experience cumulative impacts associated with traffic from the Rio Bravo Pipeline Project, as previously described, along with additional impacts from the projects within the cumulative geographic scope for traffic;[410] however, impacts from the addition of the project would be less than significant.[411] Based on Commission staff's updated environmental justice analysis, we further

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[404] *Id.* at 4-230.

[405] *See* app. B at tbls. 2 & 3.

[406] Final EIS at 4-230.

[407] *Id.*

[408] *Id.*

[409] *Id.*

[410] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[411] Final EIS at 4-465.

conclude that the overall cumulative traffic impacts on environmental justice communities would be less than significant.

(f) Noise

193. Sound levels resulting from construction of Rio Bravo Pipeline Project facilities (including use of the contractor yards) would vary over time and would depend upon the number and types of equipment operating, the level of operation, and the distance between sources and receptors.[412] Construction equipment would be operated on an as-needed basis, and environmental justice communities near the construction areas may experience an increase in perceptible noise, but the effect would be temporary and local.[413] Sound from construction activities near environmental justice communities along the dual pipeline system route could be either intermittent or continuous, but would occur over a limited duration at any one location; with construction near residences limited to the shortest timeframe possible to safely install the facilities.[414]

194. Rio Bravo conducted an HDD acoustical impact assessment, which found that sound levels for 24-hour HDD operations would exceed our noise criterion of an L_{dn} of 55 dBA at NSAs near four proposed HDDs at mileposts 82.0, 92.0, 93.0, and 118.7 within environmental justice communities. Rio Bravo will implement the following mitigation at HDD locations that would exceed our noise criterion of an L_{dn} of 55 dBA at NSAs: use of temporary sound barriers around the HDD workspace; use of sound barriers or an acoustical enclosure around the drilling mud cleaning system; and offer temporary housing to residents in the vicinity of HDD operation. In addition, Rio Bravo is required as a condition of the Commission's Authorization Order to prepare a noise mitigation plan prior to construction for each HDD where noise would exceed the Commission's noise criterion at the NSAs. Prior to any approval of the plans, Commission staff will ensure that the plans include the appropriate mitigation to meet the Commission's noise criteria and ensure that these plans are implemented during construction.[415]

195. The final EIS concluded that environmental justice communities in the study area would experience cumulative impacts related to noise from the Rio Bravo Pipeline Project, as previously described, along with additional impacts from the projects within

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[412] *Id.* at 4-296.

[413] *Id.*

[414] *Id.*

[415] *Id.*, Condition 38 at 5-32.

the cumulative geographic scope for noise;[416] however, impact from the addition of the project would be less than significant.[417] Based on staff's updated environmental justice analysis, we conclude that overall cumulative noise impacts on environmental justice communities would be less than significant.

(g) Air Quality

196. As discussed in the final EIS section 4.11.1.3, construction of the Rio Bravo Pipeline Project would result in impacts on air quality. The construction emissions are anticipated from operation of construction equipment, operation of the onsite concrete batch plants, deliveries of supplies, worker commutes, and land disturbance. Fugitive dust emissions would include contributions from general site construction work (acreage impacted), earth-moving fugitive dust emissions (quantity of soil moved), and unpaved road travel (distance of travel and weight of vehicles). Fugitive dust would be produced primarily during the site preparation activities, when the site would be cleared of debris, leveled, and graded, including at proposed offsite facilities.[418]

197. Also as discussed in the final EIS section 4.11.1.3, construction of the Rio Bravo Pipeline Project would result in a temporary increase in emissions due to the combustion of fuel in vehicles and equipment, dust generated from excavation, grading and fill activities, and general construction activities (e.g., painting and welding). Construction emissions associated with pipeline construction would be minimal and localized to the construction area, which would predominantly occur in sparsely populated areas.

198. The increase in diameter of Pipeline 1 would not result in additional construction emissions detailed in the Amendment Project EA. The proposed increase in diameter of Pipeline 1 would not change the construction emission estimates for the pipeline detailed in the final EIS.[419] Therefore, based on Commission staff's updated environmental justice analysis, we conclude that environmental justice communities would not experience significant air quality impacts during construction of the pipeline facilities.

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[416] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[417] Final EIS at 4-494 to 4-495.

[418] *Id.* at 4-256 to 4-257.

[419] Amendment Project EA at 25.

(h) Visual Impacts

199. Rio Bravo will construct and operate its pipeline facilities across large parcels of land consisting mostly of open land used for ranching and grazing, as well as agricultural land,[420] which are partially located within environmental justice communities. This land also contains numerous easements for oil and gas pipelines, including at least 50 known foreign pipelines that would be crossed by the proposed pipeline project.[421] As a result, the existing viewshed is characterized, in part, by existing infrastructure associated with these systems.

200. Vegetation cover is generally limited at these locations; however, these areas include large tracts of land in a rural setting with no residences within sight. Visual receptors along the pipeline system route and in proximity to the proposed aboveground facilities would include motorists, including those from environmental justice communities, on nearby roadways who may be able to view construction workers and equipment, as well as the meter and compressor stations themselves during operation; however, their view would be short in duration. Based on Commission staff's updated environmental justice analysis, we conclude that the Meter Station HS4, in Jim Wells County, would result in short-term localized visual impacts during construction and a permanent but less than significant impact during operation.

201. Although construction of the pipelines would contribute to cumulative impacts on the viewshed, they would generally be temporary to short-term in nature.[422] Given the lack of visual receptors in the vicinity of aboveground facilities associated with the pipeline project, their contribution to cumulative visual impacts would be permanent, but minor.[423] Following construction, the areas associated with the pipeline project would be restored in accordance with the project-specific Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Procedures.[424]

202. The physical facilities of the LNG terminal and the aboveground facilities associated with the pipeline project would result in a permanent and moderate changes in

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[420] Final EIS at 4-203.

[421] *Id.*

[422] *Id.* at 4-459.

[423] *Id.*

[424] The Plan and Procedures are a set of construction and mitigation measures developed to minimize the potential environmental impacts of the construction of pipeline projects.

the existing viewshed for nearby visual receptors,[425] including those from environmental justice communities. In addition, the Texas LNG Terminal site, which is located immediately adjacent to the Rio Grande LNG Terminal site, has the potential to result in significant visual impacts.[426] Based on Commission staff's updated environmental justice analysis, we conclude that the overall potential significant cumulative visual resources impacts on environmental justice communities would occur, along with additional impacts from the projects within the cumulative geographic scope for visual;[427] however, the Rio Bravo Pipeline Project's contribution to these impacts would be less than significant.[428]

c. Environmental Justice Conclusion

203. As described in the final EIS and in the above analysis, the Rio Grande LNG Terminal and the amended Rio Bravo Pipeline Project will have a range of impacts on the environment and individuals living in the vicinity of the project facilities, including environmental justice communities.

204. For the Rio Grande LNG Terminal, out of 293 block groups within a 50-kilometer radius 286 block groups were considered environmental justice communities. The closest environmental justice block groups are Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1. For the Brownsville offsite parking location, Commission staff identified two environmental justice community block groups within a one-mile radius of the site. For the Port Isabel offsite parking location, Commission staff identified four environmental justice community block groups within a one-mile radius of the site.

205. For the Rio Bravo Pipeline Project, as proposed in Rio Bravo's Amendment Project application and approved herein, Commission staff identified 14 environmental justice community block groups crossed by the pipeline. Compressor Station 1 is not within an environmental justice block group; however, Commission staff identified 87 environmental justice community block groups within a 50-kilometer radius of the site. Meter Station HS3 (Kleberg County) is not located within an environmental justice block group; however, commission staff identified one environmental justice community

[425] Final EIS at 4-459.

[426] *Id.*

[427] Rio Grande May 20, 2022 Response to Commission staff's May 2, 2022 Environmental Information Request at tbl. 4.13.1-2.

[428] Final EIS at 4-459.

block group within a 1-mile radius of the site (Census Tract 9502.02, Block Group 2). Meter Station HS4 (Jim Wells County) is located within an environmental justice community (Census Tract 9502.02, Block Group 2). Contractor Yards 1, 2, and 3 are located within an environmental justice community (Census Tract 9503, Block Group 1, Census Tract 9501, Block Group 1, and Census Tract 144.01, Block Group 1, respectively).

206. Based on the foregoing analysis, we find that impacts on environmental justice populations from construction and operation of the LNG terminal, Meter Station HS4, the Meter Station located at the LNG terminal, Contractor Yards 1, 2 and 3, and a majority of the 135-mile pipeline would be disproportionately high and adverse because they would be predominately borne by environmental justice communities. In addition, based on Commission staff's updated environmental justice analysis above, we conclude that environmental justice communities within the Rio Grande LNG Terminal area may experience significant cumulative visual impacts when considered with other potential projects in the viewshed. Project-related impacts associated with wetlands, surface water, recreational and subsistence fishing, tourism, socioeconomics, traffic, visual resources, noise, and air quality would be less than significant.

IV. Conclusion

207. In conformance with the court's opinion, in this order on remand, we respond to the arguments pertaining to whether the use of the social cost of GHGs is required by CEQ's regulations and disclose the social cost of GHG calculations for informational purposes, but, as discussed, we do not characterize the significance of the projects' GHG emissions. Additionally, consistent with CEQ and EPA guidance and recommendations, the Commission conducted a new environmental justice analysis with updated units of geographic analysis for assessing the projects' impacts on environmental justice communities. We conclude that the impacts on environmental justice populations from the projects would be disproportionately high and adverse because they would be predominately borne by the environmental justice communities identified and, specifically, communities in the areas near the Rio Grande LNG Terminal may experience significant cumulative visual impacts; but all other impacts would be less than significant for both the Rio Grande LNG Terminal and the Rio Bravo Pipeline Project.

208. We continue to find that the projects, as conditioned in the Authorization Order and as modified herein, are environmentally acceptable actions. We continue to support our previous findings of the benefits of these projects. Further, as stated above, we find that the Rio Grande LNG Terminal is not inconsistent with the public interest and that the Rio Bravo Pipeline Project, as amended, is required by the public convenience and necessity, as conditioned in the Authorization Order and as modified herein.

209. Compliance with the environmental conditions appended to our orders is integral to ensuring that the environmental impacts of approved projects are consistent with those

anticipated by our environmental analyses. Thus, Commission staff carefully reviews all information submitted. Only when satisfied that the applicant has complied with all applicable conditions will a notice to proceed with the activity to which the conditions are relevant be issued. We also note that the Commission has the authority to take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project, including authority to impose any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order, as well as the avoidance or mitigation of unforeseen adverse environmental impacts resulting from project construction and operation.

210. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this authorization. The Commission encourages cooperation between interstate pipelines and local authorities. However, this does not mean that state and local agencies, through application of state or local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by this Commission.[429]

211. At a hearing held on April 20, 2023, the Commission on its own motion received and made a part of the record in this proceeding all evidence, including the application, applicant data responses, and exhibits therein, and all comments, and upon consideration of the record.

The Commission orders:

(A) The Order Granting Authorizations under Sections 3 and 7 of the Natural Gas Act in Docket No. CP16-455-000 is amended, as described and conditioned herein, and as more fully described in the application and subsequent filings by the applicant, including any commitments made therein.

(B) Rio Bravo's revised initial rates and *pro forma* tariff records are approved, as discussed above.

(C) Rio Bravo shall file actual tariff records that comply with the requirements contained in the body of this order at least 30 days but not more than 60 days prior to the

[429] *See* 15 U.S.C. § 717r(d) (state or federal agency's failure to act on a permit considered to be inconsistent with Federal law); *see also Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 310 (1988) (state regulation that interferes with FERC's regulatory authority over the transportation of natural gas is preempted); *Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 245 (D.C. Cir. 2013) (noting that state and local regulation is preempted by the NGA to the extent it conflicts with federal regulation, or would delay the construction and operation of facilities approved by the Commission).

commencement of interstate service consistent with Part 154 of the Commission's regulations.

(D) The Commission affirms its earlier determinations that the Rio Grande LNG Terminal is not inconsistent with the public interest, and the Rio Bravo Pipeline Project, as amended, is required by the public convenience and necessity.

(E) All directives in the Authorization Order remain in effect, except for the revision to the requirement to file actual records 60 days before the commencement of interstate service, as discussed above.

(F) Rio Bravo and Rio Grande shall continue to comply with all applicable terms and the environmental conditions set forth in the Appendix to the Authorization Order.

(G) The certificate authority issued in Ordering Paragraphs (A) and (D) is conditioned on Rio Bravo's compliance with the environmental conditions in Appendix A to this order.

(H) The NGA section 3 authorization in Ordering Paragraph (D) is conditioned on Rio Grande's compliance with the environmental conditions in Appendix A to this order.

(I) Rio Bravo shall comply with all applicable Commission regulations under the NGA, particularly the general terms and conditions set forth in paragraphs (a), (b), (c), (e), and (f) of section 157.20 of the regulations.

(J) Rio Bravo shall complete construction of the proposed facilities and make them available for service within the timeframe conditioned in the Authorization Order, in accordance with section 157.20(b) of the Commission's regulations.

(K) Rio Grande and Rio Bravo shall notify the Commission's environmental staff by telephone or e-mail of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies Rio Grande or Rio Bravo. Rio Grande and Rio Bravo shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

(L) Sierra Club's request for a trial-type hearing is denied, as discussed in the body of this order.

By the Commission. Chairman Phillips is concurring with a separate statement attached.
Commissioner Clements is dissenting with a separate statement attached.

(S E A L)

Debbie-Anne A. Reese,
Deputy Secretary.

Appendix A

Rio Bravo Environmental Conditions

Rio Bravo shall continue to comply with environmental conditions set forth in the Appendix to the Commission's November 22, 2019 *Order Granting Authorizations Under Sections 3 and 7 of the Natural Gas Act* specific to Docket No. CP16-455-000, and those conditions apply to the amended facilities. In addition, as recommended in the Environmental Assessment (EA), this authorization includes the following conditions:

1. Rio Bravo Pipeline Company, LLC (Rio Bravo) shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the order. Rio Bravo must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;

    b. justify each modification relative to site-specific conditions;

    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and

    d. receive approval in writing from the Director of the Office of Energy Projects (OEP), or the Director's designee, **before using that modification**.

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project. This authority shall allow:

    a. the modification of conditions of the order;

    b. stop-work authority; and

    c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from project construction and operation.

3. Rio Bravo shall file a noise survey with the Secretary **no later than 60 days** after the modified Compressor Station 1 is placed in service. If a full load condition noise survey is not possible, Rio Bravo shall provide an interim survey at the maximum possible horsepower load and provide the full load survey **within six months**. If the noise attributable to the operation of all of the equipment at the facility under interim or full horsepower load conditions exceeds a day-night level of 55 A-weighted decibels at any nearby noise-sensitive areas, Rio Bravo shall file a report on what additional noise controls are needed and shall install the additional noise controls to meet the level **within one year** of the in-service date. Rio Bravo shall confirm compliance with the above requirement by filing an additional noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

4. All conditions attached to the water quality certification issued by Texas Railroad Commission constitute mandatory conditions of this Authorization Order. **Prior to construction**, Rio Bravo shall file, for review and written approval of the Director of OEP, or the Director's designee, any revisions to its project design necessary to comply with the water quality certification conditions.

Rio Grande Authorization Order
Modified Environmental Conditions 53 and 54 and
Additional Environmental Condition 144

Rio Grande shall continue to comply with environmental conditions set forth in the Appendix to the Commission's November 22, 2019 *Order Granting Authorizations Under Sections 3 and 7 of the Natural Gas Act* specific to Docket No. CP16-454-000. In addition, as recommended in this order, this order modifies conditions 53 and 54 and includes condition 144:

53. **Prior to construction of final design**, Rio Grande shall file with the Secretary, for review and approval by the Director of OEP, or their designee, an updated Emergency Response Plan, including evacuation and any sheltering and re-entry, and coordinate procedures with the U.S. Coast Guard; state, county, and local emergency planning groups; fire departments; state and local law enforcement; and other appropriate federal agencies. This plan shall be consistent with recommended and good engineering practices, as defined in National Fire Protection Association (NFPA) 1600, NFPA 1616, NFPA 1620, NFPA 470, NFPA 475, or approved equivalents, and based on potential impacts and onsets of hazards from accidental and intentional events along the liquefied natural gas (LNG) marine vessel route and potential impacts and onset of hazards from accidental and intentional events at the LNG terminal, including but not limited to a catastrophic failure of the largest LNG tank. This plan shall address any special considerations and pre-incident planning for infrastructure and public with access and functional needs and shall include at a minimum:

a. materials and plans for periodic dissemination of public education and training materials in English and Spanish for potential hazards and impacts, identification of potential hazards, and steps for public notification, evacuation, and shelter in place within any transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;

b. plans to competently train emergency responders required to effectively and safely respond to hazardous material incidents including, but not limited to, LNG fires and dispersion;

c. plans to competently train emergency responders to effectively and safely evacuate or shelter public within transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;

d. designated contacts with federal, state, and local emergency response agencies responsible for emergency management and response within any transient

hazard areas along the marine vessel route, and within hazard areas from LNG terminal;

e. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;

f. scalable procedures for mobilizing response and establishing a unified command, including identification, location, and design of any emergency operations centers and emergency response equipment required to effectively and safely respond to hazardous material incidents and evacuate or shelter public within transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;

g. scalable procedures for notifying public, including identification, location, design, and use of any permanent sirens or other warning devices required to effectively communicate and warn the public prior to onset of debilitating hazards within any transient hazard areas along the LNG marine vessel route and within hazard areas from LNG terminal;

h. scalable procedures for evacuating the public, including identification, location, design, and use of evacuation routes/methods and any mustering locations required to effectively and safely evacuate the public within any transient hazard areas along the LNG marine transit route and within hazard areas from LNG terminal; and

i. scalable procedures for sheltering the public, including identification, location, design, and use of any shelters demonstrated to be needed and demonstrated to effectively and safely shelter the public prior to onset of debilitating hazards within transient hazard areas that may better benefit from sheltering in place (i.e., those within Zones of Concern 1 and 2), along the route of the LNG marine vessel and within hazard areas that may benefit from sheltering in place (i.e., those within areas of 1,600 BTU/ft^2-hr and 10,000 BTU/ft^2-hr radiant heats from fires with farthest impacts, including from a catastrophic failure of largest LNG tank) of the LNG terminal.

Rio Grande shall notify Commission staff of all planning meetings in advance and shall report progress on the development of its Emergency Response Plan **at 3-month intervals**. Rio Grande shall file with the Secretary public versions of offsite emergency response procedures for public notification, evacuation, and shelter in place.

54. **Prior to construction of final design**, Rio Grande shall file with the Secretary for review and written approval by the Director of the Office of Energy Projects, or the

Director's designee, an updated Cost-Sharing Plan identifying the mechanisms for funding all Project-specific security/emergency management costs that would be imposed on state and local agencies. This comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. This plan shall include sustained funding of any requirement or resource gap analysis identified to effectively and safely evacuate and shelter public and to effectively and safely respond to hazardous material incidents consistent with recommended and good engineering practices. Rio Grande shall notify Commission staff of all planning meetings in advance and shall report progress on the development of its Cost Sharing Plan **at 3-month intervals**.

144. **Prior to commissioning**, Rio Grande shall file with the Secretary, for review and written approval by the Director of the Office of Energy Projects, or the Director's designee, a Project Ambient Air Quality Mitigation and Monitoring Plan for periods when construction, commissioning and start-up, and operation of the LNG terminal occur simultaneously. To ensure that concurrent emissions during construction, commissioning and start-up, and operation of terminal facilities are effectively mitigated, the plan's thresholds for concentrations of particulate matter ($PM_{2.5}$ and PM_{10}) and nitrogen oxide (NO_2) must be established based on the National Ambient Air Quality Standards (NAAQS), as specified in 40 C.F.R. Part 50 and shall:

a. include a monitoring plan for $PM_{2.5}$, PM_{10}, and NO_2, including a description of the site selection process for the proposed locations for air quality monitors; data management; reporting; and protocols to manage any potential exceedances of the NAAQS for $PM_{2.5}$, PM_{10}, and NO_2 that may be observed during the monitoring activities;

b. detail what measures Rio Grande will implement should the levels of $PM_{2.5}$ or PM_{10} exceed the NAAQS 24-hour limit or should the levels of NO_2 exceed the NAAQS 1-hour limit as specified in 40 C.F.R. Part 50; and

c. provide that Rio Grande will file weekly reports during periods when the plan is in use, documenting the duration of any exceedances, reasons for elevated levels of $PM_{2.5}$, PM_{10}, or NO_2, actual measured values, and to the extent there are exceedances, what minimization or mitigation measures Rio Grande implemented to reduce these levels and documentation of a reduction to or below the threshold(s).

Appendix B

Environmental Justice Tables and Figures

Table 1
Minority Populations by Race and Low-Income Populations within 50 Kilometers of Rio Grande LNG Terminal

		RACE COLUMN									LOW-INCOME COLUMN
State/ County/ Tract/ Block Group	Total Population	White (Not Hispanic) (%)	Black or African American (%)	American Indian and Alaskan Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority (%)[a, b]	Below Poverty Level (%)[b]
Texas	28,635,442	41.4	11.8	0.2	4.9	0.1	0.2	2.0	39.4	58.6	13.4
Rio Grande LNG Terminal											
Cameron County	***422,135***	***8.8***	***0.4***	***0.1***	***0.7***	***0.0***	***0.0***	***0.2***	***89.8***	***91.2***	***25.7***
Census Tract 101.01, Block Group 1	1,645	3.2	0.0	0.0	0.6	0.0	0.0	0.0	96.2	**96.8**	**31.8**
Census Tract 101.01, Block Group 2	1,622	18.4	0.0	1.4	0.0	0.0	0.0	0.0	80.3	**81.6**	7.3
Census Tract 101.01, Block Group 3	881	15.4	0.0	0.0	0.0	0.0	0.0	2.7	81.8	**84.6**	**28.0**
Census Tract 101.02, Block Group 1	361	66.2	0.0	0.0	5.5	0.0	0.0	8.0	20.2	33.8	15.8
Census Tract 101.02, Block Group 2	1,112	36.3	0.0	0.0	0.0	0.0	0.0	0.0	63.7	**63.7**	**52.4**
Census Tract 101.02, Block Group 3	520	22.3	0.0	0.0	0.0	0.0	0.0	0.0	77.7	**77.7**	**29.6**
Census Tract 101.03, Block Group 1	1,834	2.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0	**98.0**	**31.2**
Census Tract 101.03, Block Group 2	1,344	3.7	0.0	0.0	0.0	0.0	0.0	3.7	92.6	**96.3**	13.6
Census Tract 102.01, Block Group 1	1,402	4.3	0.0	0.0	0.0	0.0	0.0	0.0	95.7	**95.7**	15.2
Census Tract 102.01, Block Group 2	574	8.5	0.0	0.0	0.0	0.0	0.0	0.0	91.5	**91.5**	13.7
Census Tract 102.04, Block Group 1	2,264	29.3	0.0	0.0	0.0	0.0	0.0	0.0	70.7	**70.7**	15.4
Census Tract 102.04, Block Group 2	1,682	30.6	0.0	0.0	0.1	0.0	0.0	0.0	69.3	**69.4**	**29.9**
Census Tract 102.05, Block Group 1	1,353	14.6	0.4	0.0	0.0	0.0	0.0	0.0	85.0	**85.4**	20.4
Census Tract 102.05, Block Group 2	1,190	25.6	0.0	0.0	1.1	0.0	0.0	0.0	73.3	**74.4**	13.7
Census Tract 102.05, Block Group 4	927	20.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	**80.0**	18.0
Census Tract 104.04, Block Group 1	882	26.0	0.0	0.0	0.0	0.0	0.0	0.0	74.0	**74.0**	6.9
Census Tract 104.04, Block Group 2	2,129	0.9	5.1	0.0	0.0	0.0	0.0	0.0	94.0	**99.1**	15.0
Census Tract 104.05, Block Group 2	1,573	19.5	0.0	0.0	2.2	0.0	0.0	0.0	78.3	**80.5**	0.0
Census Tract 104.06, Block Group 1	1,423	5.1	0.0	0.0	0.0	0.0	0.0	0.0	94.9	**94.9**	0.0
Census Tract 104.06, Block Group 2	1,473	7.8	0.0	0.0	0.0	0.0	0.0	0.0	92.2	**92.2**	**27.1**
Census Tract 105, Block Group 1	551	8.5	0.0	0.0	0.0	0.0	0.0	0.0	91.5	**91.5**	4.3
Census Tract 105, Block Group 2	2,218	2.7	0.0	0.0	0.1	0.0	0.0	0.0	97.2	**97.3**	23.6
Census Tract 106.02, Block Group 1	1,607	27.4	1.4	0.0	1.6	0.0	0.0	4.2	65.3	**72.6**	7.6
Census Tract 106.03, Block Group 1	1,198	4.1	0.0	0.0	0.0	0.0	0.0	1.0	94.9	**95.9**	**28.7**
Census Tract 106.03, Block Group 2	1,463	14.4	0.8	0.0	0.0	0.0	0.0	0.0	84.8	**85.6**	24.5
Census Tract 106.03, Block Group 3	1,755	15.7	0.3	0.0	0.0	0.0	0.0	0.6	83.5	**84.3**	**46.2**
Census Tract 106.04, Block Group 1	1,463	3.1	0.0	0.0	3.3	0.0	0.0	0.0	93.6	**96.9**	**38.1**
Census Tract 106.04, Block Group 2	1,498	12.6	0.0	0.0	10.0	0.0	0.0	0.0	77.4	**87.4**	**28.0**
Census Tract 106.04, Block Group 3	1,170	8.9	0.0	3.8	0.7	0.0	0.0	3.2	83.4	**91.1**	18.2
Census Tract 107, Block Group 1	923	3.4	0.0	0.0	0.0	0.0	0.0	0.0	96.6	**96.6**	0.0

Census Tract 107, Block Group 2	819	17.5	0.0	0.0	0.0	0.0	0.0	0.0	82.5	**82.5**	**42.5**
Census Tract 107, Block Group 3	1,206	11.9	0.0	0.0	0.0	7.1	0.0	1.2	79.8	**88.1**	17.2
Census Tract 108.01, Block Group 1	935	7.9	0.0	0.0	0.0	0.0	0.0	0.0	92.1	**92.1**	**43.9**
Census Tract 108.01, Block Group 2	1,521	16.8	0.5	2.4	0.0	0.0	0.0	0.0	80.3	**83.2**	4.6
Census Tract 108.01, Block Group 3	1,899	11.7	0.0	0.0	0.0	0.0	0.0	0.0	88.3	**88.3**	**41.3**
Census Tract 108.02, Block Group 1	2,503	5.1	0.0	1.2	0.0	0.0	0.0	0.0	93.8	**94.9**	**35.9**
Census Tract 108.02, Block Group 2	774	21.3	0.0	0.0	0.0	0.0	0.0	0.0	78.7	**78.7**	**27.8**
Census Tract 108.02, Block Group 3	572	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	0.0
Census Tract 109, Block Group 1	410	7.3	3.7	0.0	1.0	0.0	0.0	3.7	84.4	**92.7**	**27.7**
Census Tract 109, Block Group 2	915	1.7	0.0	0.0	0.0	0.0	0.0	3.1	95.2	**98.3**	**36.4**
Census Tract 110, Block Group 1	585	22.1	0.0	0.0	0.0	0.0	0.0	0.0	77.9	**77.9**	**56.5**
Census Tract 110, Block Group 2	673	4.0	0.0	0.0	0.0	0.0	0.0	0.0	96.0	**96.0**	**51.2**
Census Tract 110, Block Group 3	1,344	2.6	0.0	0.0	0.0	0.0	0.0	0.0	97.4	**97.4**	**50.3**
Census Tract 111, Block Group 1	605	19.3	1.3	0.0	0.0	0.0	0.0	0.0	79.3	**80.7**	25.1
Census Tract 111, Block Group 2	1,255	1.4	0.0	0.0	0.0	0.0	0.0	0.0	98.6	**98.6**	**33.5**
Census Tract 111, Block Group 3	561	13.2	0.0	0.0	0.0	0.0	0.0	0.0	86.8	**86.8**	15.2
Census Tract 112, Block Group 1	922	10.1	0.0	0.0	0.0	0.0	0.0	0.0	89.9	**89.9**	**32.3**
Census Tract 112, Block Group 2	696	12.5	0.0	0.0	0.0	0.0	0.0	0.0	87.5	**87.5**	**32.8**
Census Tract 113.01, Block Group 1	726	20.5	0.0	0.0	0.0	0.0	0.0	0.0	79.5	**79.5**	10.0
Census Tract 113.01, Block Group 2	640	16.9	1.6	0.0	0.0	0.0	0.0	0.0	81.6	**83.1**	**26.0**
Census Tract 113.02, Block Group 1	1,309	28.7	4.7	0.0	0.0	0.0	0.0	5.2	61.4	**71.3**	8.3
Census Tract 113.02, Block Group 2	1,333	32.9	3.2	0.0	6.8	0.0	0.0	0.0	57.1	**67.1**	5.5
Census Tract 113.02, Block Group 3	1,838	21.7	6.3	0.7	4.0	0.0	0.0	0.0	67.2	**78.3**	1.5
Census Tract 114.01, Block Group 1	1,051	35.2	0.0	0.0	0.0	0.0	0.0	0.0	64.8	**64.8**	7.5
Census Tract 114.01, Block Group 2	1,972	7.8	0.0	0.0	0.0	0.0	0.0	0.0	92.2	**92.2**	**32.0**
Census Tract 114.01, Block Group 3	1,806	14.0	2.8	0.0	0.0	0.0	0.0	0.0	83.2	**86.0**	0.0
Census Tract 114.02, Block Group 1	1,006	15.6	0.0	0.0	0.0	0.0	0.0	0.0	84.4	**84.4**	12.9
Census Tract 114.02, Block Group 2	1,187	28.5	0.0	0.0	0.0	0.0	0.0	0.0	71.5	**71.5**	24.5
Census Tract 114.02, Block Group 3	783	24.3	0.0	0.0	0.0	0.0	0.0	0.0	75.7	**75.7**	**26.3**
Census Tract 115, Block Group 1	637	5.2	0.0	0.0	0.0	0.0	0.0	0.0	94.8	**94.8**	**35.8**
Census Tract 115, Block Group 2	869	0.0	0.7	0.0	0.0	0.0	0.0	0.0	99.3	**100.0**	**31.9**
Census Tract 115, Block Group 3	1,265	1.6	0.2	0.0	0.0	0.0	0.0	0.0	98.3	**98.4**	**36.3**
Census Tract 115, Block Group 4	547	6.9	0.0	0.0	0.0	0.0	0.0	0.0	93.1	**93.1**	24.4
Census Tract 115, Block Group 5	2,848	2.3	0.0	0.0	0.0	0.0	0.0	0.0	97.7	**97.7**	**30.0**
Census Tract 116.01, Block Group 1	731	2.7	0.0	0.0	0.0	0.0	0.0	0.0	97.3	**97.3**	**52.2**
Census Tract 116.01, Block Group 2	1,600	1.3	0.8	0.0	0.0	0.0	0.0	0.0	98.0	**98.8**	**27.1**
Census Tract 116.02, Block Group 1	876	8.6	0.0	0.0	0.0	1.0	0.0	0.0	90.4	**91.4**	12.7
Census Tract 116.02, Block Group 2	2,402	2.4	0.0	0.0	0.0	0.0	0.0	0.4	97.2	**97.6**	25.1
Census Tract 117.01, Block Group 1	898	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**43.4**
Census Tract 117.01, Block Group 2	3,230	4.8	0.3	0.0	0.0	0.0	0.0	0.0	94.9	**95.2**	**35.7**
Census Tract 117.02, Block Group 1	1,600	0.1	0.0	0.0	0.0	0.0	0.0	0.0	99.9	**99.9**	**38.0**
Census Tract 117.02, Block Group 2	892	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**32.9**
Census Tract 117.02, Block Group 3	1,103	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**36.4**

Census Tract 118.01, Block Group 1	1,375	3.1	1.2	0.0	4.1	0.0	0.0	0.0	91.6	**96.9**	**44.6**
Census Tract 118.01, Block Group 2	1,675	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	**98.8**	6.7
Census Tract 118.01, Block Group 3	930	21.4	4.0	0.0	0.0	0.0	0.0	0.0	74.6	**78.6**	**38.4**
Census Tract 118.01, Block Group 4	1,241	19.3	1.6	0.0	0.6	0.0	0.0	0.4	78.1	**80.7**	18.5
Census Tract 118.02, Block Group 1	453	5.5	1.8	0.0	0.0	0.0	0.0	6.0	86.8	**94.5**	15.6
Census Tract 118.02, Block Group 2	1,859	4.6	1.5	0.0	0.0	0.0	0.0	0.0	93.9	**95.4**	**49.8**
Census Tract 118.02, Block Group 3	1,451	9.8	0.0	0.0	2.9	0.0	0.0	0.0	87.3	**90.2**	**27.9**
Census Tract 120.02, Block Group 1	562	22.6	0.0	0.0	0.0	0.0	0.0	0.0	77.4	**77.4**	21.2
Census Tract 120.02, Block Group 3	1,874	8.3	0.0	0.0	0.0	0.0	0.0	0.0	91.7	**91.7**	18.0
Census Tract 120.02, Block Group 4	905	12.4	0.3	0.0	0.0	0.0	0.0	0.0	87.3	**87.6**	7.0
Census Tract 120.03, Block Group 1	1,045	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	17.7
Census Tract 120.03, Block Group 2	1,176	15.5	4.8	0.0	2.0	0.0	0.0	4.3	73.4	**84.5**	6.7
Census Tract 120.03, Block Group 3	1,229	20.5	5.5	0.0	3.5	0.0	0.0	0.0	70.5	**79.5**	**26.9**
Census Tract 120.04, Block Group 3	467	64.5	0.0	0.0	0.0	0.0	0.0	0.0	35.5	35.5	8.9
Census Tract 121.03, Block Group 1	392	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2
Census Tract 121.04, Block Group 1	1,772	9.4	0.0	0.0	3.4	0.3	0.0	0.5	86.3	**90.6**	0.0
Census Tract 121.04, Block Group 2	1,769	4.2	0.0	0.0	0.0	0.0	0.0	0.0	95.8	**95.8**	22.5
Census Tract 121.04, Block Group 3	911	5.9	0.0	0.0	0.0	0.0	0.0	0.0	94.1	**94.1**	5.0
Census Tract 121.05, Block Group 1	1,333	6.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	**94.0**	14.1
Census Tract 121.05, Block Group 2	1,357	0.4	0.0	0.0	0.0	0.0	0.0	0.0	99.6	**99.6**	**47.1**
Census Tract 121.06, Block Group 1	627	7.5	0.0	0.0	0.0	0.0	0.0	0.0	92.5	**92.5**	**43.0**
Census Tract 121.06, Block Group 2	978	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**45.7**
Census Tract 122.01, Block Group 1	409	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**46.9**
Census Tract 122.01, Block Group 2	1,367	15.3	14.2	0.0	0.0	0.0	0.3	0.1	70.1	**84.7**	22.7
Census Tract 122.01, Block Group 3	1,559	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	8.8
Census Tract 122.02, Block Group 1	1,428	1.1	0.1	0.0	0.0	0.0	0.0	0.0	98.7	**98.9**	23.0
Census Tract 122.02, Block Group 2	1,067	9.1	0.0	0.0	0.0	0.0	0.1	0.5	90.3	**90.9**	13.0
Census Tract 122.02, Block Group 3	995	5.7	0.0	13.1	0.0	0.0	0.0	0.0	81.2	**94.3**	15.6
Census Tract 122.03, Block Group 1	1,464	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**42.9**
Census Tract 122.03, Block Group 2	533	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	8.3
Census Tract 122.03, Block Group 3	2,736	0.3	0.0	0.0	0.0	0.0	0.0	0.0	99.7	**99.7**	**31.4**
Census Tract 123.01, Block Group 1	1,619	53.2	0.0	0.0	1.6	0.0	0.0	0.0	45.2	46.8	11.1
Census Tract 123.01, Block Group 2	821	53.3	1.5	1.1	0.0	0.0	0.0	0.0	44.1	46.7	22.4
Census Tract 123.01, Block Group 3	174	51.7	0.0	0.0	0.0	0.0	0.0	0.0	48.3	48.3	18.5
Census Tract 123.01, Block Group 4	1,105	66.2	0.0	0.0	0.0	0.0	0.0	0.4	33.5	33.8	**29.3**
Census Tract 123.04, Block Group 1	538	52.6	0.0	0.0	0.0	0.0	0.0	0.0	47.4	47.4	**33.7**
Census Tract 123.04, Block Group 2	2,289	6.2	0.0	0.0	0.0	0.0	0.0	0.0	93.8	**93.8**	**40.0**
Census Tract 123.04, Block Group 3	1,219	42.7	0.0	0.0	0.0	0.0	0.0	1.1	56.2	**57.3**	10.0
Census Tract 123.04, Block Group 4	786	7.1	0.0	0.0	8.8	0.0	0.0	0.0	84.1	**92.9**	**42.0**
Census Tract 123.05, Block Group 1	3,079	70.6	4.4	0.0	2.2	0.0	0.0	1.2	21.6	29.4	10.0
Census Tract 124.02, Block Group 1	1,882	18.7	0.0	0.0	0.0	0.0	0.0	0.0	81.3	**81.3**	23.1
Census Tract 124.02, Block Group 2	638	10.8	0.0	0.0	0.0	0.0	0.0	0.0	89.2	**89.2**	**37.6**
Census Tract 124.02, Block Group 3	1,100	11.6	0.0	0.0	0.0	0.0	0.0	0.0	88.4	**88.4**	**47.8**

Census Tract 124.02, Block Group 4	2,392	9.5	0.0	0.0	0.0	0.0	0.0	0.0	90.5	**90.5**	**38.8**
Census Tract 124.03, Block Group 1	1,081	27.5	0.0	0.0	0.0	0.0	0.0	0.0	72.5	**72.5**	25.3
Census Tract 124.03, Block Group 2	2,423	9.6	0.0	0.0	0.0	0.0	0.0	0.0	90.4	**90.4**	16.0
Census Tract 124.04, Block Group 1	1,285	2.3	0.0	0.0	0.0	0.0	0.0	0.0	97.7	**97.7**	20.2
Census Tract 124.04, Block Group 2	2,015	2.8	0.0	0.0	0.0	0.0	0.0	0.8	96.4	**97.2**	**57.7**
Census Tract 124.04, Block Group 3	822	17.6	0.0	0.0	0.0	0.0	0.0	0.0	82.4	**82.4**	**30.7**
Census Tract 125.06, Block Group 1	1,458	3.2	0.0	0.0	0.0	0.0	0.0	0.0	96.8	**96.8**	10.0
Census Tract 125.06, Block Group 2	1,314	25.8	0.0	0.0	0.8	0.0	0.0	0.0	73.4	**74.2**	7.7
Census Tract 125.06, Block Group 3	1,702	24.2	0.0	1.7	6.7	0.0	0.0	0.0	67.4	**75.8**	11.5
Census Tract 125.08, Block Group 1	1,459	24.1	0.0	0.0	0.0	0.0	0.0	0.0	75.9	**75.9**	16.8
Census Tract 125.08, Block Group 2	2,785	4.9	0.0	0.2	0.7	0.0	0.0	0.0	94.2	**95.1**	21.7
Census Tract 125.09, Block Group 1	862	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**42.4**
Census Tract 125.09, Block Group 2	2,092	13.0	0.0	0.0	7.6	0.0	0.0	0.0	79.5	**87.0**	**53.9**
Census Tract 125.10, Block Group 1	2,251	0.0	0.0	0.0	0.0	0.0	0.0	3.2	96.8	**100.0**	**30.0**
Census Tract 125.10, Block Group 2	2,357	5.3	0.0	0.0	0.0	0.0	0.0	0.0	94.7	**94.7**	20.9
Census Tract 125.10, Block Group 3	1,567	2.6	0.0	0.0	0.0	0.0	0.0	0.0	97.4	**97.4**	**32.0**
Census Tract 125.11, Block Group 1	1,716	1.4	0.0	0.0	0.0	0.0	0.0	0.0	98.6	**98.6**	22.1
Census Tract 125.11, Block Group 2	1,938	3.4	0.0	0.0	0.0	0.0	0.0	0.0	96.6	**96.6**	9.2
Census Tract 125.11, Block Group 3	1,983	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**29.4**
Census Tract 125.12, Block Group 1	998	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**51.6**
Census Tract 125.12, Block Group 2	1,531	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**35.1**
Census Tract 125.13, Block Group 1	2,104	4.4	0.0	0.0	0.0	0.0	0.0	0.0	95.6	**95.6**	**30.6**
Census Tract 125.13, Block Group 2	1,354	12.7	0.0	0.0	0.0	0.0	0.0	0.0	87.3	**87.3**	**27.4**
Census Tract 125.14, Block Group 1	3,485	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	16.4
Census Tract 125.14, Block Group 2	2,160	15.0	0.0	0.0	0.0	0.0	0.0	0.0	85.0	**85.0**	16.9
Census Tract 125.15, Block Group 1	2,411	6.1	0.0	0.0	1.8	0.0	0.0	0.0	92.0	**93.9**	6.6
Census Tract 125.15, Block Group 2	721	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	0.0
Census Tract 125.16, Block Group 1	766	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	21.1
Census Tract 125.16, Block Group 2	311	10.3	0.0	0.0	0.0	0.0	0.0	0.0	89.7	**89.7**	0.0
Census Tract 125.16, Block Group 3	1,274	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	0.0
Census Tract 125.17, Block Group 1	1,324	5.7	0.0	0.0	0.0	0.0	0.0	0.0	94.3	**94.3**	8.8
Census Tract 125.17, Block Group 2	898	1.3	0.0	0.0	0.0	0.0	0.0	0.0	98.7	**98.7**	0.0
Census Tract 125.17, Block Group 3	1,260	2.3	0.0	0.0	0.0	0.0	0.0	0.0	97.7	**97.7**	25.2
Census Tract 126.07, Block Group 1	1,508	0.2	0.0	0.0	0.0	0.0	0.0	0.0	99.8	**99.8**	21.8
Census Tract 126.07, Block Group 2	1,172	2.1	0.0	0.0	0.0	0.0	0.0	0.0	97.9	**97.9**	**50.2**
Census Tract 126.08, Block Group 1	1,483	0.7	0.5	0.0	0.0	0.0	0.0	0.0	98.8	**99.3**	**33.7**
Census Tract 126.08, Block Group 2	918	6.3	0.0	0.0	0.0	0.0	0.0	0.0	93.7	**93.7**	**32.5**
Census Tract 126.08, Block Group 3	2,401	0.9	0.0	0.0	3.9	0.0	0.0	0.0	95.2	**99.1**	9.0
Census Tract 126.08, Block Group 4	385	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	0.0
Census Tract 126.13, Block Group 1	846	8.9	0.0	0.0	0.0	0.0	0.0	0.0	91.1	**91.1**	15.0
Census Tract 126.13, Block Group 2	882	5.8	0.9	0.0	3.6	0.0	0.0	0.0	89.7	**94.2**	3.4
Census Tract 126.13, Block Group 3	2,020	3.4	0.0	0.0	2.7	0.0	0.0	0.9	93.0	**96.6**	11.0
Census Tract 126.13, Block Group 4	1,506	2.9	6.0	0.0	4.3	0.0	0.0	1.1	85.7	**97.1**	23.0

Census Tract 126.14, Block Group 1	1,690	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**38.2**
Census Tract 126.14, Block Group 2	1,572	1.4	0.0	0.0	0.0	0.0	0.0	0.0	98.6	**98.6**	**42.1**
Census Tract 126.15, Block Group 1	1,181	1.8	0.0	0.0	0.0	0.0	0.0	0.0	98.2	**98.2**	**35.3**
Census Tract 126.15, Block Group 2	1,135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**28.9**
Census Tract 126.15, Block Group 3	976	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**33.5**
Census Tract 126.16, Block Group 1	1,886	6.3	0.5	2.4	0.0	0.0	0.0	0.0	90.8	**93.7**	8.6
Census Tract 126.16, Block Group 2	1,777	1.5	0.3	0.0	0.0	0.0	0.0	0.0	98.1	**98.5**	6.5
Census Tract 126.17, Block Group 1	1,133	1.5	0.0	0.0	0.0	0.0	0.0	0.0	98.5	**98.5**	22.2
Census Tract 126.17, Block Group 2	1,588	1.1	1.1	0.0	4.3	0.0	0.0	0.0	93.4	**98.9**	6.8
Census Tract 126.17, Block Group 3	679	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	11.9
Census Tract 127, Block Group 1	1,459	0.7	0.0	0.0	0.0	0.0	0.0	0.0	99.3	**99.3**	**31.1**
Census Tract 127, Block Group 2	599	5.8	0.0	0.0	0.0	0.0	0.0	0.0	94.2	**94.2**	**48.5**
Census Tract 127, Block Group 3	1,326	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	**98.8**	**31.4**
Census Tract 127, Block Group 4	1,688	5.8	0.0	0.0	0.0	0.0	0.0	0.0	94.2	**94.2**	**49.9**
Census Tract 128, Block Group 1	1,278	5.6	0.0	0.0	0.0	0.0	0.0	0.0	94.4	**94.4**	10.3
Census Tract 128, Block Group 2	939	13.4	2.6	0.0	0.0	0.0	0.0	0.0	84.0	**86.6**	0.0
Census Tract 128, Block Group 3	1,071	1.6	0.0	0.0	0.0	0.0	0.0	0.0	98.4	**98.4**	**33.7**
Census Tract 128, Block Group 4	1,573	0.8	0.0	0.0	0.0	0.0	0.0	0.0	99.2	**99.2**	23.7
Census Tract 129, Block Group 1	1,039	12.0	3.3	0.0	0.0	0.0	0.0	1.3	83.4	**88.0**	**30.7**
Census Tract 129, Block Group 2	359	23.1	0.0	0.0	0.0	0.0	0.0	0.0	76.9	**76.9**	24.7
Census Tract 129, Block Group 3	2,314	7.6	0.0	0.0	0.0	0.0	0.0	0.0	92.4	**92.4**	**40.1**
Census Tract 129, Block Group 4	619	24.7	2.3	0.0	0.0	0.0	0.0	0.0	73.0	**75.3**	**33.8**
Census Tract 130.02, Block Group 1	1,311	6.9	0.0	0.0	0.0	0.0	0.0	0.0	93.1	**93.1**	13.7
Census Tract 130.02, Block Group 2	734	3.8	0.0	0.0	0.0	0.0	0.0	0.0	96.2	**96.2**	**27.8**
Census Tract 130.02, Block Group 3	738	11.7	0.0	0.0	0.0	0.0	0.0	0.0	88.3	**88.3**	20.1
Census Tract 130.02, Block Group 4	1,403	4.0	0.0	0.0	1.6	0.0	0.0	0.0	94.4	**96.0**	**49.8**
Census Tract 130.03, Block Group 1	855	4.1	0.0	0.0	0.0	0.0	0.0	0.0	95.9	**95.9**	**43.3**
Census Tract 130.03, Block Group 2	1,311	5.0	1.4	0.5	0.0	0.0	0.0	0.7	92.4	**95.0**	**44.6**
Census Tract 130.04, Block Group 1	743	15.7	0.0	0.0	0.0	0.0	0.0	0.0	84.3	**84.3**	17.2
Census Tract 130.04, Block Group 2	676	22.0	0.0	0.0	0.9	0.0	0.0	0.0	77.1	**78.0**	15.8
Census Tract 130.04, Block Group 3	852	2.5	0.0	0.0	0.0	0.0	0.0	0.0	97.5	**97.5**	20.3
Census Tract 131.02, Block Group 1	676	9.6	0.0	0.0	0.0	0.0	0.0	0.0	90.4	**90.4**	7.3
Census Tract 131.02, Block Group 2	1,770	4.3	0.0	0.0	0.0	0.0	0.0	0.0	95.7	**95.7**	12.5
Census Tract 131.02, Block Group 3	1,760	10.8	0.0	0.0	1.4	0.0	0.0	0.0	87.8	**89.2**	**27.1**
Census Tract 131.04, Block Group 1	1,419	8.4	0.0	0.0	0.8	0.0	0.0	0.0	90.8	**91.6**	0.0
Census Tract 131.04, Block Group 2	859	14.1	0.0	0.0	0.6	0.0	0.0	2.9	82.4	**85.9**	2.9
Census Tract 131.04, Block Group 3	853	1.1	0.0	0.0	0.0	0.0	0.0	0.0	98.9	**98.9**	**36.7**
Census Tract 131.06, Block Group 1	1,910	1.7	0.0	0.0	0.0	0.0	0.0	0.0	98.3	**98.3**	**61.5**
Census Tract 131.06, Block Group 2	1,830	1.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	**99.0**	**32.6**
Census Tract 131.06, Block Group 3	1,120	4.1	0.0	0.0	1.3	0.0	0.0	1.4	93.2	**95.9**	**25.9**
Census Tract 132.03, Block Group 1	1,327	5.0	0.0	0.0	0.0	0.0	0.0	1.5	93.4	**95.0**	**34.4**
Census Tract 132.03, Block Group 2	873	1.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	**99.0**	**37.9**
Census Tract 132.04, Block Group 1	1,174	3.5	0.0	0.0	0.0	0.0	0.0	0.0	96.5	**96.5**	**50.7**

Census Tract 132.04, Block Group 2	799	0.0	0.0	0.0	0.0	0.0	2.4	0.0	97.6	**100.0**	**27.2**
Census Tract 132.05, Block Group 1	1,957	0.8	0.0	0.0	0.0	0.0	0.0	0.5	98.8	**99.2**	24.8
Census Tract 132.05, Block Group 2	1,699	2.6	0.0	0.0	0.0	0.0	0.0	0.0	97.4	**97.4**	**38.0**
Census Tract 132.06, Block Group 1	1,007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**38.0**
Census Tract 132.06, Block Group 2	1,190	1.5	0.0	0.0	0.0	0.0	0.0	0.0	98.5	**98.5**	**28.4**
Census Tract 132.06, Block Group 3	1,018	2.2	0.0	0.0	0.0	0.0	0.0	0.0	97.8	**97.8**	**27.7**
Census Tract 132.07, Block Group 1	1,963	7.1	0.0	0.0	0.0	0.0	0.0	0.0	92.9	**92.9**	15.5
Census Tract 132.07, Block Group 2	2,099	2.9	0.0	0.0	0.0	0.0	0.0	0.0	97.1	**97.1**	**45.9**
Census Tract 132.07, Block Group 3	1,167	5.1	0.0	0.0	0.0	0.0	0.0	0.0	94.9	**94.9**	**35.9**
Census Tract 133.03, Block Group 1	894	1.2	0.0	0.0	1.2	1.2	0.0	0.0	96.3	**98.8**	1.7
Census Tract 133.03, Block Group 2	1,705	1.9	0.0	0.0	0.0	0.0	0.0	0.0	98.1	**98.1**	**41.1**
Census Tract 133.03, Block Group 3	1,516	1.3	0.0	0.0	0.0	0.0	0.0	0.0	98.7	**98.7**	**39.5**
Census Tract 133.05, Block Group 1	974	1.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	**99.0**	**26.2**
Census Tract 133.05, Block Group 2	1,263	0.6	0.0	0.0	0.0	0.0	0.0	0.0	99.4	**99.4**	10.1
Census Tract 133.05, Block Group 3	1,464	2.8	0.0	0.0	0.0	0.0	0.0	0.0	97.2	**97.2**	**34.3**
Census Tract 133.05, Block Group 4	760	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**43.3**
Census Tract 133.06, Block Group 1	1,028	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**35.4**
Census Tract 133.06, Block Group 2	1,633	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**31.0**
Census Tract 133.07, Block Group 1	1,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**27.9**
Census Tract 133.07, Block Group 2	1,132	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**38.5**
Census Tract 133.08, Block Group 1	1,613	4.1	0.0	0.0	0.0	0.0	0.0	0.0	95.9	**95.9**	22.4
Census Tract 133.08, Block Group 2	635	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**27.1**
Census Tract 133.08, Block Group 3	1,497	1.1	0.0	0.0	0.0	0.0	0.0	0.0	98.9	**98.9**	**46.1**
Census Tract 133.09, Block Group 1	1,384	0.4	0.0	0.0	0.0	0.0	0.0	0.0	99.6	**99.6**	**39.5**
Census Tract 133.09, Block Group 2	1,482	0.3	0.0	0.0	0.0	0.0	0.0	0.0	99.7	**99.7**	**38.5**
Census Tract 134.01, Block Group 1	1,676	1.0	1.7	0.5	0.0	0.0	0.0	0.0	96.7	**99.0**	**43.2**
Census Tract 134.01, Block Group 2	708	4.5	0.0	0.0	0.0	0.0	0.0	0.0	95.5	**95.5**	**42.9**
Census Tract 134.02, Block Group 1	840	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**36.5**
Census Tract 134.02, Block Group 2	632	9.7	0.0	0.0	0.0	0.0	0.0	0.0	90.3	**90.3**	20.1
Census Tract 134.02, Block Group 3	522	0.0	0.0	0.0	0.6	0.0	0.0	0.0	99.4	**100.0**	**43.9**
Census Tract 135, Block Group 1	1,308	18.6	0.4	0.0	1.4	0.0	0.0	0.0	79.7	**81.4**	0.2
Census Tract 135, Block Group 2	603	5.0	0.0	0.0	0.0	0.0	0.0	0.0	95.0	**95.0**	21.6
Census Tract 136, Block Group 1	253	13.8	0.0	0.0	0.0	0.0	0.0	0.0	86.2	**86.2**	**39.5**
Census Tract 136, Block Group 2	1,047	10.5	0.8	0.0	0.0	0.0	0.0	0.0	88.7	**89.5**	16.2
Census Tract 136, Block Group 3	858	6.8	0.0	0.0	0.0	0.0	0.0	0.0	93.2	**93.2**	21.3
Census Tract 136, Block Group 4	548	11.5	0.0	0.0	0.2	0.0	0.0	0.0	88.3	**88.5**	**39.8**
Census Tract 137, Block Group 1	732	4.2	0.0	0.0	0.0	0.0	0.0	0.0	95.8	**95.8**	**28.2**
Census Tract 137, Block Group 2	436	3.4	0.0	0.0	0.0	0.0	0.0	0.0	96.6	**96.6**	**44.5**
Census Tract 137, Block Group 3	766	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**69.9**
Census Tract 137, Block Group 4	1,908	1.9	0.0	0.0	0.0	0.0	0.0	0.0	98.1	**98.1**	**43.5**
Census Tract 138.01, Block Group 1	593	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	**98.8**	**51.9**
Census Tract 138.01, Block Group 2	1,493	4.8	6.2	0.0	0.0	0.0	0.0	0.5	88.5	**95.2**	**67.7**
Census Tract 138.02, Block Group 1	724	1.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	**99.0**	**53.3**

Census Tract 138.02, Block Group 2	527	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**33.9**
Census Tract 138.02, Block Group 3	877	7.6	0.0	0.0	0.0	0.0	0.0	0.0	92.4	**92.4**	**42.3**
Census Tract 138.02, Block Group 4	699	3.7	0.0	0.0	0.0	0.0	0.0	0.0	96.3	**96.3**	**41.1**
Census Tract 139.01, Block Group 1	575	4.5	0.0	0.0	0.0	0.0	0.0	0.0	95.5	**95.5**	**46.7**
Census Tract 139.01, Block Group 2	1,970	1.9	0.0	0.0	0.0	0.0	0.0	0.0	98.1	**98.1**	**42.4**
Census Tract 139.02, Block Group 1	1,267	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	17.9
Census Tract 139.02, Block Group 2	1,698	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**44.6**
Census Tract 139.02, Block Group 3	1,006	3.7	0.0	0.0	2.1	0.0	0.0	0.0	94.2	**96.3**	**45.9**
Census Tract 139.03, Block Group 1	2,284	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**35.1**
Census Tract 139.03, Block Group 2	1,647	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**49.0**
Census Tract 140.01, Block Group 1	849	2.8	0.0	0.0	0.0	0.0	0.0	0.0	97.2	**97.2**	24.8
Census Tract 140.01, Block Group 2	980	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**84.2**
Census Tract 140.01, Block Group 3	415	3.4	2.9	0.0	5.8	0.0	6.0	8.7	73.3	**96.6**	**60.5**
Census Tract 140.02, Block Group 1	1,211	9.6	0.0	0.0	0.0	0.0	0.0	0.0	90.4	**90.4**	**42.2**
Census Tract 140.02, Block Group 2	1,060	9.7	0.1	0.0	0.0	0.0	0.0	0.0	90.2	**90.3**	**58.8**
Census Tract 141.01, Block Group 1	782	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	19.9
Census Tract 141.01, Block Group 2	1,021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	0.0
Census Tract 141.01, Block Group 3	1,966	31.5	0.0	0.0	0.0	0.0	0.0	0.0	68.5	**68.5**	17.4
Census Tract 141.01, Block Group 4	1,240	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**35.6**
Census Tract 141.02, Block Group 1	2,166	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**45.0**
Census Tract 141.02, Block Group 2	642	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	0.0
Census Tract 141.02, Block Group 3	978	9.9	0.0	0.0	0.0	0.0	0.0	0.0	90.1	**90.1**	**59.9**
Census Tract 141.03, Block Group 1	1,390	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	19.4
Census Tract 141.03, Block Group 2	388	17.0	0.0	0.0	0.0	0.0	0.0	0.0	83.0	**83.0**	0.0
Census Tract 141.03, Block Group 3	1,508	5.2	0.0	0.0	0.0	0.0	0.0	0.0	94.8	**94.8**	**59.1**
Census Tract 142.01, Block Group 1	1,247	2.6	0.0	0.0	0.0	0.0	0.0	0.0	97.4	**97.4**	**32.8**
Census Tract 142.01, Block Group 2	895	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	23.8
Census Tract 142.02, Block Group 1	1,997	12.9	0.0	0.0	0.0	0.0	0.0	0.0	87.1	**87.1**	13.8
Census Tract 142.02, Block Group 2	1,082	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**44.2**
Census Tract 143, Block Group 1	1,786	4.0	0.0	0.0	0.0	0.0	0.0	7.4	88.6	**96.0**	**54.9**
Census Tract 143, Block Group 2	1,897	2.4	0.0	0.0	0.0	0.0	0.0	0.0	97.6	**97.6**	**45.1**
Census Tract 143, Block Group 3	1,161	7.8	0.0	0.0	0.0	0.0	0.0	0.0	92.2	**92.2**	**33.3**
Census Tract 144.01, Block Group 1	2,806	1.0	0.0	0.0	0.5	0.0	0.0	0.0	98.5	**99.0**	4.8
Census Tract 144.01, Block Group 2	3,855	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	25.1
Census Tract 144.01, Block Group 3	547	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	0.0
Census Tract 144.02, Block Group 1	2,742	17.6	0.0	0.0	10.0	0.0	0.0	0.0	72.4	**82.4**	3.8
Census Tract 144.02, Block Group 2	890	4.8	0.0	0.0	0.0	0.0	0.0	0.0	95.2	**95.2**	23.2
Census Tract 144.02, Block Group 3	1,822	4.8	0.0	0.0	0.0	0.0	0.0	0.0	95.2	**95.2**	13.0
Census Tract 144.03, Block Group 1	3,111	3.9	0.0	0.0	0.0	0.0	0.0	0.0	96.1	**96.1**	2.6
Census Tract 144.03, Block Group 2	759	0.0	0.0	0.0	4.6	0.0	0.0	0.0	95.4	**100.0**	**72.7**
Census Tract 144.04, Block Group 1	4,034	0.0	0.0	0.0	2.4	0.0	0.0	0.0	97.6	**100.0**	22.7
Census Tract 144.04, Block Group 2	884	23.1	0.0	0.0	0.0	0.0	0.0	0.0	76.9	**76.9**	**51.8**
Census Tract 145.01, Block Group 1	1,609	8.9	0.0	0.0	6.5	0.0	0.0	0.0	84.5	**91.1**	**27.9**

Census Tract 145.01, Block Group 2	1,606	7.8	0.0	0.0	0.0	0.0	0.0	0.0	92.2	**92.2**	2.2
Census Tract 145.01, Block Group 3	1,002	12.1	5.3	0.0	0.0	0.0	0.0	0.0	82.6	**87.9**	19.7
Census Tract 145.02, Block Group 1	2,096	1.7	0.0	0.0	0.0	0.0	0.0	0.0	98.3	**98.3**	0.0
Census Tract 145.02, Block Group 2	1,098	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	20.1
Census Tract 145.02, Block Group 3	1,837	6.0	1.0	0.0	0.0	0.0	0.0	0.0	93.0	**94.0**	10.2
Census Tract 9800.01, Block Group 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Census Tract 9801, Block Group 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Census Tract 9900, Block Group 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Willacy County	***21,419***	***10.6***	***0.7***	***0.0***	***0.0***	***0.0***	***0.0***	***0.5***	***88.2***	***89.4***	***26.7***
Census Tract 9506, Block Group 1	1,133	16.1	0.0	0.0	0.0	0.0	0.0	0.0	83.9	**83.9**	**31.0**
Census Tract 9507, Block Group 1	1,165	32.3	0.0	0.0	0.0	0.0	0.0	0.0	67.7	**67.7**	**43.8**
Census Tract 9900, Block Group 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Sources:
Race and Ethnicity Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates, Hispanic or Latino Origin by Race. Table No. B03002. Accessed on May 3, 2022.
Available online at:
https://data.census.gov/cedsci/table?text=B03002&g=0500000US48061%241500000,48489%241500000&tid=ACSDT5Y2020.B03002
Below Poverty Level Source: U.S. Census Bureau, 2020 ACS Poverty Status in the Past 12 Months by Household Type by Age of Householder. Table No. B17017. Accessed on May 3, 2022.
Available online at:
https://data.census.gov/cedsci/table?q=B17017%3A%20POVERTY%20STATUS%20IN%20THE%20PAST%2012%20MONTHS%20BY%20HOUSEHOLD%20TYPE%20BY%20AGE%20OF%20HOUSEHOLDER&g=0500000US48061%241500000,48489%241500000&tid=ACSDT5Y2020.B17017
Notes:
[a] Percent total minority is calculated by subtracting the percent of White Alone, non-Hispanic from 100 percent.
[b] Minority or low-income populations exceeding the established thresholds are indicated in red, bold type and blue shading.

TABLE 2.

MINORITY POPULATIONS BY RACES AND ETHNICITY AND LOW-INCOME POPULATIONS WITHIN 50 KILOMETERS OF RIO BRAVO PIPELINE PROJECT'S COMPRESSOR STATION 1

State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority [a]	% Household Below Poverty Level [b]
Compressor Station 1											
TEXAS	--	--	--	--	--	--	--	--	--	--	--
Brooks County	***7,100***	***7.9***	***0.1***	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	***91.7***	***92.1***	***42.9***

TABLE 2.

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State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority [a]	% Household Below Poverty Level [b]
Census Tract 9501, Block Group 1	2,217	8.3	0.4	0.0	0.0	0.0	0.0	0.0	91.4	91.7	59.8
Census Tract 9501, Block Group 2	320	2.5	0.0	0.0	0.0	0.0	0.0	0.0	97.5	97.5	46.7
Census Tract 9502, Block Group 1	812	0.9	0.0	0.0	0.0	0.0	0.0	0.0	99.1	99.1	10.0
Census Tract 9502, Block Group 2	168	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	26.3
Census Tract 9502, Block Group 3	658	0.8	0.0	0.0	0.0	0.0	0.0	0.0	99.2	99.2	59.6
Census Tract 9502, Block Group 4	2,149	16.8	0.0	0.0	0.0	0.0	0.0	0.0	83.2	83.2	40.2
Census Tract 9502, Block Group 5	776	0.0	0.0	0.0	0.0	0.0	0.0	1.9	98.1	100.0	24.6
Duval County	***11,194***	***9.3***	***1.4***	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	***89.3***	***90.7***	***21.9***
Census Tract 9501, Block Group 1	790	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	71.2
Census Tract 9501, Block Group 2	180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	15.8
Census Tract 9501, Block Group 3	1,543	4.5	0.0	0.0	0.0	0.0	0.0	0.0	95.5	95.5	28.8
Census Tract 9501, Block Group 4	826	11.1	0.0	0.0	0.0	0.0	0.0	0.0	88.9	88.9	6.8
Census Tract 9501, Block Group 5	1,444	10.0	10.5	0.0	0.0	0.0	0.0	0.6	78.9	90.0	29.3
Census Tract 9505, Block Group 1	505	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	39.6
Census Tract 9505, Block Group 2	893	5.8	0.0	0.0	0.0	0.0	0.0	0.0	94.2	94.2	7.3
Census Tract 9505, Block Group 3	2,254	2.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0	98.0	19.9
Jim Hogg County	***5,187***	***7.1***	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	***92.6***	***92.9***	***23.8***
Census Tract 9504, Block Group 1	721	1.9	0.3	0.0	0.0	0.0	0.0	0.0	97.8	98.1	4.4
Jim Wells County	***40,796***	***17.8***	***0.7***	***0.2***	***0.5***	***0.0***	***0.0***	***0.4***	***80.4***	***82.2***	***19.8***
Census Tract 9501.01, Block Group 2	566	97.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	3.0	8.1
Census Tract 9501.01, Block Group 3	985	6.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	94.0	0.0

TABLE 2.

MINORITY POPULATIONS BY RACES AND ETHNICITY AND LOW-INCOME POPULATIONS WITHIN 50 KILOMETERS OF RIO BRAVO PIPELINE PROJECT'S COMPRESSOR STATION 1

State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority [a]	% Household Below Poverty Level [b]
Census Tract 9501.02, Block Group 3	752	42.0	0.0	0.0	0.0	0.0	0.0	0.0	58.0	58.0	39.3
Block Group 1, Census Tract 9502.01	720	11.5	0.0	0.0	0.0	0.0	0.0	0.0	88.5	88.5	34.3
Census Tract 9502.01, Block Group 2	1,349	37.1	0.0	0.0	0.0	0.0	0.0	0.0	62.9	62.9	19.8
Census Tract 9502.01, Block Group 3	1,539	25.6	0.0	0.0	0.0	0.0	0.0	0.0	74.4	74.4	35.2
Census Tract 9502.02, Block Group 1	929	19.6	0.8	0.0	0.0	0.0	0.0	0.0	79.7	80.4	17.8
Census Tract 9502.02, Block Group 2	1,368	23.4	0.0	0.0	0.0	0.0	0.0	0.0	76.6	76.6	6.9
Census Tract 9502.02, Block Group 3	2,400	21.2	0.0	0.0	0.0	0.0	0.0	0.0	78.8	78.8	20.6
Census Tract 9503.01, Block Group 1	1,138	10.6	0.0	0.0	0.0	0.0	0.0	0.0	89.4	89.4	33.1
Census Tract 9503.01, Block Group 2	2,841	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	26.2
Census Tract 9503.02, Block Group 1	816	10.9	0.0	0.0	0.0	0.0	0.0	0.0	89.1	89.1	0.0
Census Tract 9503.02, Block Group 2	1,639	6.8	5.9	0.0	0.0	0.0	0.0	0.0	85.2	93.2	12.3
Census Tract 9503.03, Block Group 1	1,234	15.6	0.0	0.0	0.0	0.0	0.0	0.0	74.1	84.4	0.0
Census Tract 9503.03, Block Group 2	323	76.5	0.0	0.0	0.0	0.0	0.0	0.0	23.5	23.5	0.0
Census Tract 9504, Block Group 1	853	21.5	3.2	0.0	0.0	0.0	2.3	0.0	70.3	78.5	14.7
Census Tract 9504, Block Group 2	1,156	7.8	0.2	0.0	0.0	0.0	0.0	0.0	91.0	92.2	14.8
Census Tract 9504, Block Group 3	1,064	23.6	2.3	0.0	0.0	0.0	0.0	0.0	74.2	76.4	15.8
Census Tract 9505, Block Group 1	756	3.0	0.0	0.0	0.0	0.0	0.0	0.0	97.0	97.0	28.2
Census Tract 9505, Block Group 2	1,225	14.4	0.0	0.0	0.0	0.0	0.0	0.0	85.6	85.6	36.4
Census Tract 9505, Block Group 3	1,406	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.9	100.0	2.7
Census Tract 9505, Block Group 4	1,066	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	63.5
Census Tract 9505, Block Group 5	769	8.5	0.0	0.0	0.0	0.0	0.0	0.0	91.5	91.5	66.0

TABLE 2.

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State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority [a]	% Household Below Poverty Level [b]
Census Tract 9506, Block Group 1	1,427	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.9	**100.0**	**41.6**
Census Tract 9506, Block Group 2	303	5.0	0.0	0.0	0.0	0.0	0.0	0.0	95.0	**95.0**	**29.3**
Census Tract 9506, Block Group 3	843	1.4	0.0	0.0	0.0	0.0	0.0	0.0	98.6	**98.6**	16.9
Census Tract 9506, Block Group 4	973	10.1	0.0	0.0	0.0	0.0	0.0	0.0	88.6	**89.9**	**38.1**
Census Tract 9507, Block Group 1	619	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**28.6**
Census Tract 9507, Block Group 2	502	5.0	1.4	0.0	0.0	0.0	0.0	0.0	92.2	**95.0**	4.7
Census Tract 9507, Block Group 3	1,443	10.9	0.0	0.0	0.0	0.0	0.0	0.0	89.1	**89.1**	5.7
Census Tract 9507, Block Group 4	841	44.4	0.0	0.0	0.0	0.0	0.0	0.0	55.6	**55.6**	9.1
Kenedy County	***391***	***3.1***	***0.0***	***0.0***	***0.3***	***0.0***	***0.0***	***0.0***	***96.7***	***96.9***	***3.1***
Census Tract 9501, Block Group 1	391	3.1	0.0	0.0	0.0	0.0	0.0	0.0	96.7	**96.9**	**3.1**
Kleberg County	***30,725***	***20.0***	***3.0***	***0.1***	***2.3***	***0.0***	***0.2***	***1.4***	***73.0***	***80.0***	***26.5***
Census Tract 201.01, Block Group 1	1,156	25.8	0.0	0.0	0.0	0.0	0.0	0.3	73.9	**74.2**	14.7
Census Tract 201.01, Block Group 2	1,088	64.2	2.0	0.0	0.0	0.0	0.0	0.0	33.7	35.8	5.0
Census Tract 201.01, Block Group 3	782	62.3	0.4	0.0	0.0	0.0	0.0	1.5	34.5	37.7	7.5
Census Tract 201.02, Block Group 1	1,587	11.5	0.0	0.0	0.0	0.0	0.0	0.0	88.5	**88.5**	**27.4**
Census Tract 201.02, Block Group 2	871	51.3	1.4	0.0	0.0	0.0	0.0	0.0	47.3	48.7	13.4
Census Tract 202, Block Group 1	783	4.1	0.0	0.0	0.0	0.0	0.0	0.0	95.9	**95.9**	**57.3**
Census Tract 202, Block Group 2	769	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**63.6**
Census Tract 202, Block Group 3	1,513	0.0	2.9	0.0	0.0	0.0	0.0	0.0	97.1	**100.0**	**61.2**
Census Tract 202, Block Group 4	1,044	2.1	1.5	0.0	0.0	0.0	0.0	0.0	96.4	**97.9**	24.0
Census Tract 202, Block Group 5	535	2.1	0.0	0.0	0.0	0.0	0.0	0.0	96.8	**97.9**	**48.1**

TABLE 2.

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State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority [a]	% Household Below Poverty Level [b]
Census Tract 203.01, Block Group 1	2,057	6.8	2.8	0.0	0.0	0.0	0.0	0.0	80.8	**93.2**	**42.9**
Census Tract 203.01, Block Group 2	750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	14.0
Census Tract 203.02, Block Group 1	1,876	17.8	7.2	0.0	0.2	0.0	0.5	0.0	71.4	**82.2**	**72.3**
Census Tract 203.02, Block Group 2	619	36.5	0.0	0.0	0.0	0.0	0.0	0.0	63.5	**63.5**	0.0
Census Tract 203.02, Block Group 3	1,458	1.5	0.0	0.0	0.0	0.0	0.0	0.0	98.5	**98.5**	**33.5**
Census Tract 203.02, Block Group 4	960	22.5	14.6	0.0	0.0	0.0	0.0	0.2	62.7	**77.5**	**28.1**
Census Tract 204.01, Block Group 1	1,565	31.1	0.0	0.0	0.0	0.0	2.0	1.2	64.7	**68.9**	8.3
Census Tract 204.01, Block Group 2	1,028	16.1	1.6	0.0	0.0	0.0	0.0	7.9	69.8	**83.9**	20.4
Census Tract 204.01, Block Group 3	641	10.3	0.0	0.0	0.0	0.0	0.0	5.3	82.5	**89.7**	0.0
Census Tract 204.02, Block Group 1	619	2.4	17.0	0.0	0.0	0.0	0.0	12.1	68.5	**97.6**	**32.1**
Census Tract 204.02, Block Group 2	893	18.5	0.0	0.0	0.0	0.0	0.0	1.7	79.8	**81.5**	**32.3**
Census Tract 204.02, Block Group 3	1,103	27.9	0.0	0.0	0.0	0.0	0.0	0.0	72.1	**72.1**	12.3
Census Tract 205.01, Block Group 1	2,466	33.3	4.3	0.0	0.6	0.0	0.0	7.4	43.9	**66.7**	16.1
Census Tract 205.01, Block Group 2	1,404	35.5	0.6	0.0	0.0	0.0	1.1	0.0	61.1	**64.5**	4.7
Census Tract 205.02, Block Group 1	1,610	15.5	16.8	0.0	0.0	0.0	0.0	0.0	64.1	**84.5**	**38.2**
Census Tract 205.02, Block Group 2	1,021	25.2	0.0	0.0	0.0	0.0	0.0	0.0	73.2	**74.8**	8.8
Census Tract 205.02, Block Group 3	527	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**30.9**
Census Tract 56.05, Block Group 1	1209	1.7	0.0	0.0	0.0	0.0	0.0	0.0	98.3	**98.3**	**31.8**
Census Tract 56.05, Block Group 2	1123	2.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0	**98.0**	**46.5**
Census Tract 56.06, Block Group 1	693	15.7	0.0	0.0	0.0	0.0	0.0	0.0	84.3	**84.3**	**37.5**
Census Tract 58.03, Block Group 1	611	23.4	0.0	0.0	0.0	0.0	0.0	0.0	76.6	**76.6**	5.0

TABLE 2.

MINORITY POPULATIONS BY RACES AND ETHNICITY AND LOW-INCOME POPULATIONS WITHIN 50 KILOMETERS OF RIO BRAVO PIPELINE PROJECT'S COMPRESSOR STATION 1

State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority [a]	% Household Below Poverty Level [b]
Census Tract 58.03, Block Group 2	962	52.1	1.9	0.0	0.0	0.0	0.0	0.0	46.0	47.9	**19.7**
Census Tract 58.03, Block Group 4	1,154	27.1	0.0	0.0	0.0	0.0	0.0	0.0	72.9	**72.9**	1.9
Census Tract 58.04, Block Group 2	1,041	34.5	0.6	0.0	0.0	0.0	0.0	0.0	64.4	**65.5**	13.5
Census Tract 59, Block Group 1	473	16.9	0.0	0.0	0.0	0.0	0.0	0.0	83.1	**83.1**	**32.8**
Census Tract 59, Block Group 2	1,180	12.7	0.0	0.0	0.0	0.0	0.0	0.0	87.3	**87.3**	**36.2**
Census Tract 59, Block Group 3	1,129	14.1	0.0	0.0	0.0	0.0	0.0	0.0	85.9	**85.9**	**36.9**
Census Tract 60, Block Group 1	722	4.4	0.0	0.0	0.0	0.0	0.0	0.0	95.6	**95.6**	**22.6**
Census Tract 60, Block Group 2	976	19.3	0.0	0.0	0.0	0.0	0.0	0.0	80.7	**80.7**	8.5
Census Tract 60, Block Group 3	738	32.0	0.0	0.0	0.0	0.0	0.0	0.0	68.0	**68.0**	6.4
Census Tract 61, Block Group 1	885	4.2	11.6	0.0	0.0	0.0	0.0	9.9	74.2	**95.8**	**29.0**
Census Tract 61, Block Group 2	1,252	22.3	0.0	0.0	0.0	0.0	0.0	0.0	77.7	**77.7**	**17.4**
Census Tract 61, Block Group 3	1,420	38.5	13.7	0.0	0.0	0.0	0.0	0.6	47.2	**61.5**	**33.1**

Sources:
Race and Ethnicity Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates, Hispanic or Latino Origin by Race. Table No. B03002: Hispanic or Latino Origin by Race. Accessed on May 10, 2022.
Available online at: https://data.census.gov/cedsci/all?q=b03002

Below Poverty Level Source: U.S. Census Bureau, 2016-2020 ACS Poverty Status in the Past 12 Months by Household Type by Age of Householder. Table No. B17017: Poverty Status in the Past 12 Months by Household Type by Age of Householder. Accessed on May 10, 2022. Available online at:
https://data.census.gov/cedsci/table?q=B17017%3A%20POVERTY%20STATUS%20IN%20THE%20PAST%2012%20MONTHS%20BY%20HOUSEHOLD%20TYPE%20BY%20AGE%20OF%20HOUSEHOLDER&tid=ACSDT5Y2020.B17017

TABLE 3.
MINORITY POPULATIONS BY RACES AND ETHNICITY AND LOW-INCOME POPULATIONS FOR THE RIO BRAVO PIPELINE FACILITIES

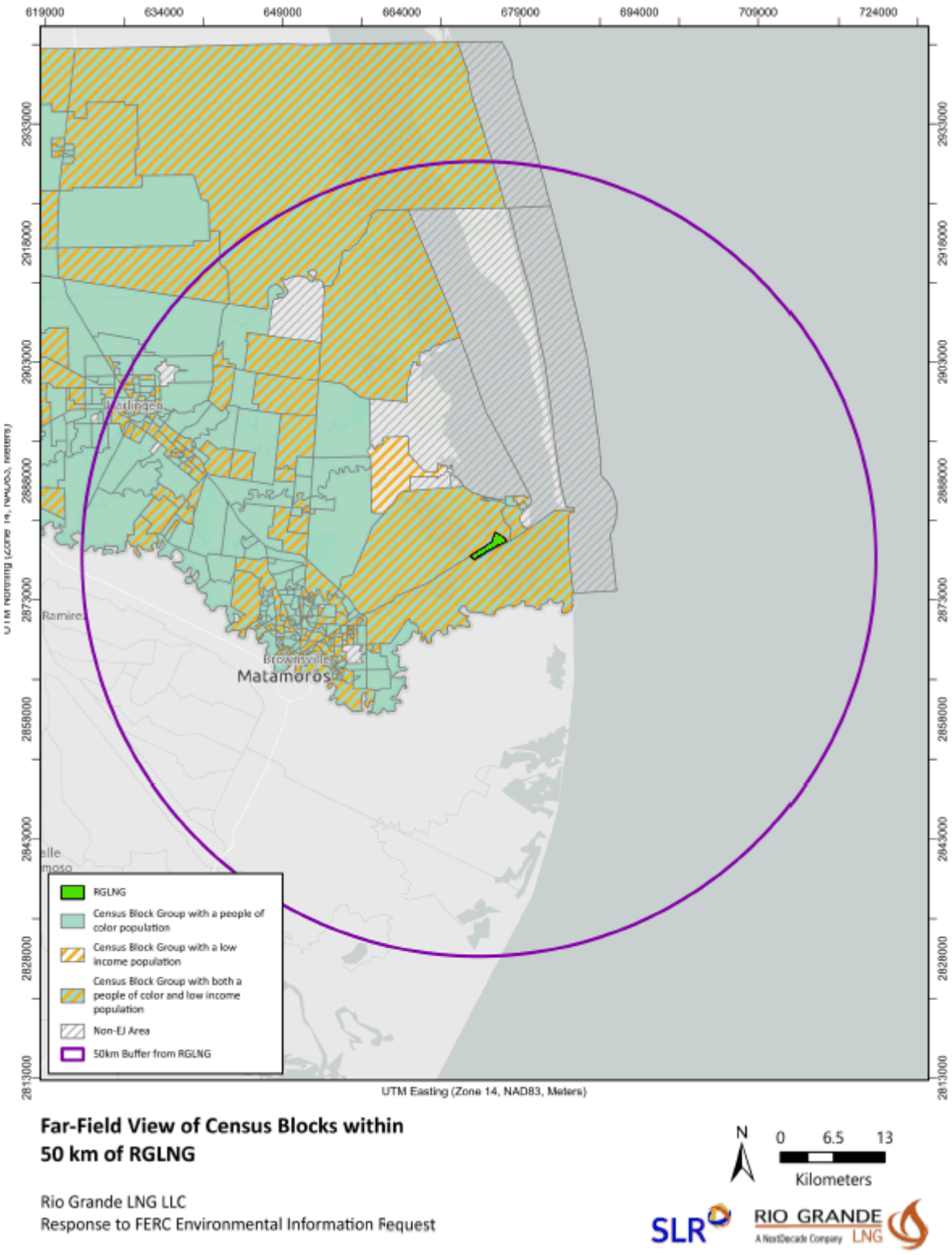
State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority	% Household Below Poverty Level
Meter Station HS1, and Meter Station HS2											
TEXAS	--	--	--	--	--	--	--	--	--	--	--
Kleberg County	***30,725***	***20.0***	***3.0***	***0.1***	***2.3***	***0.0***	***0.2***	***1.4***	***73.0***	***80.0***	***26.5***
Census Tract 201.02, Block Group 2	871	51.3	1.4	0.0	0.0	0.0	0.0	0.0	47.3	48.7	13.4
Pipeline Facilities											
TEXAS	--	--	--	--	--	--	--	--	--	--	--
Cameron County	***422,135***	***8.8***	***0.4***	***0.1***	***0.7***	***0.0***	***0.0***	***0.2***	***89.8***	***91.2***	***25.7***
Census Tract 101.01, Block Group 2	1,622	18.4	0.0	0.0	0.0	0.0	0.0	0.0	80.3	**81.6**	7.3
Census Tract 101.02, Block Group 1	361	66.2	0.0	0.0	0.0	0.0	0.0	8.0	20.2	33.8	15.8
Census Tract 101.02, Block Group 2	1,112	36.3	0.0	0.0	0.0	0.0	0.0	0.0	63.7	**63.7**	**52.4**
Census Tract 122.02, Block Group 2	1,067	9.1	0.0	0.0	0.0	0.0	0.1	0.5	90.3	**90.9**	13.0
Census Tract 122.02, Block Group 3	995	5.7	0.0	0.0	0.0	0.0	0.0	0.0	81.2	**94.3**	15.6
Census Tract 127, Block Group 2	599	5.8	0.0	0.0	0.0	0.0	0.0	0.0	94.2	**94.2**	**48.5**
Census Tract 142.02, Block Group 1	1,997	12.9	0.0	0.0	0.0	0.0	0.0	0.0	87.1	**87.1**	13.8
Census Tract 142.02, Block Group 2	1,082	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**44.2**
Jim Wells County	***40,796***	***17.8***	***0.7***	***0.2***	***0.5***	***0.0***	***0.0***	***0.4***	***80.4***	***82.2***	***19.8***
Census Tract 9502.02, Block Group 1	929	19.6	0.8	0.0	0.0	0.0	0.0	0.0	79.7	**80.4**	17.8
Kenedy County	***391***	***3.1***	***0.0***	***0.0***	***0.3***	***0.0***	***0.0***	***0.0***	***96.7***	***96.9***	***3.1***
Census Tract 9501, Block Group 1	391	3.1	0.0	0.0	0.0	0.0	0.0	0.0	96.7	**96.9**	**3.1**
Kleberg County	***30,725***	***20.0***	***3.0***	***0.1***	***2.3***	***0.0***	***0.2***	***1.4***	***73.0***	***80.0***	***26.5***
Census Tract 201.02, Block Group 2	871	51.3	1.4	0.0	0.0	0.0	0.0	0.0	47.3	48.7	13.4
Nueces County	***362,151***	***29.0***	***3.6***	***0.2***	***2.0***	***0.1***	***0.1***	***0.9***	***64.1***	***71.0***	***16.4***

TABLE 3.
MINORITY POPULATIONS BY RACES AND ETHNICITY AND LOW-INCOME POPULATIONS FOR THE RIO BRAVO PIPELINE FACILITIES

State/County/ Census Tract/Block Group	Total Population	% White Alone Not Hispanic	% Black or African American	% American Indian and Alaska Native	% Asian	% Native Hawaiian and Other Pacific Islander	% Some Other Race	% Two or More Races	% Hispanic or Latino Origin (of any race)	% Minority	% Household Below Poverty Level
Census Tract 54.06, Block Group 1	1,095	44.7	0.0	0.0	0.0	0.0	0.0	0.0	51.0	**55.3**	0.0
Census Tract 54.06, Block Group 2	1,058	43.3	8.8	0.0	0.0	0.0	0.0	0.0	47.9	**56.7**	5.7
Willacy County	***21,419***	***10.6***	***0.7***	***0.0***	***0.0***	***0.0***	***0.0***	***0.5***	***88.2***	***89.4***	***26.7***
Census Tract 9506, Block Group 1	1,133	16.1	0.0	0.0	0.0	0.0	0.0	0.0	83.9	**83.9**	**31.0**
Census Tract 9507, Block Group 1	1,165	32.3	0.0	0.0	0.0	0.0	0.0	0.0	67.7	**67.7**	**43.8**
Census Tract 9507, Block Group 2	944	3.4	0.0	0.0	0.0	0.0	0.0	0.0	96.6	**96.6**	**40.7**
Meter Stations HS3 and HS4											
TEXAS	--	--	--	--	--	--	--	--	--	--	--
Jim Wells County	***40,796***	***17.8***	***0.7***	***0.2***	***0.5***	***0.0***	***0.0***	***0.4***	***80.4***	***82.2***	***19.8***
Census Tract 9502.02, Block Group 1[a]	929	19.6	0.8	0.0	0.0	0.0	0.0	0.0	79.7	**80.4**	17.8
Kleberg County	***30,725***	***20.0***	***3.0***	***0.1***	***2.3***	***0.0***	***0.2***	***1.4***	***73.0***	***80.0***	***26.5***
Census Tract 201.02 , Block Group 2[b]	871	51.3	1.4	0.0	0.0	0.0	0.0	0.0	47.3	48.7	13.4
Port of Brownsville Work Temporary Storage/Parking Area											
TEXAS	--	--	--	--	--	--	--	--	--	--	--
Cameron County	***422,135***	***8.8***	***0.4***	***0.1***	***0.7***	***0.0***	***0.0***	***0.2***	***89.8***	***91.2***	***25.7***
Census Tract 142.02, Block Group 2	1,082	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	**100.0**	**44.2**
Census Tract 127, Block Group 2	599	5.8	0.0	0.0	0.0	0.0	0.0	0.0	94.2	**94.2**	**48.5**
Port Isabel Temporary Storage Area											
TEXAS	--	--	--	--	--	--	--	--	--	--	--
Cameron County	***422,135***	***8.8***	***0.4***	***0.1***	***0.7***	***0.0***	***0.0***	***0.2***	***89.8***	***91.2***	***25.7***
Census Tract 123.04, Block Group 4	786	7.1	0.0	0.0	8.8	0.0	0.0	0.0	84.1	**92.9**	**42.0**
Census Tract 123.05, Block Group 1	3,079	70.6	4.4	0.0	2.2	0.0	0.0	1.2	21.6	29.4	10.0

Census Tract 123.04, Block Group 1	538	52.6	0.0	0.0	0.0	0.0	0.0	0.0	47.4	47.4	**33.7**
Census Tract 123.04, Block Group 3	1,219	42.7	0.0	0.0	0.0	0.0	0.0	1.1	56.2	**57.3**	10.0
Census Tract 123.04, Block Group 2	2,289	6.2	0.0	0.0	0.0	0.0	0.0	0.0	93.8	**93.8**	**40.0**
Contractor Yard 1											
Willacy County	***21,419***	***10.6***	***0.7***	***0.0***	***0.0***	***0.0***	***0.0***	***0.5***	***88.2***	***89.4***	***26.7***
Census Tract 9503, Block Group 1	1,830	9.5	0.0	0.0	0.0	0.0	0.0	0.0	90.5	**90.5**	13.2
Census Tract 9505, Block Group 1	1,344	8.7	0.0	0.0	0.0	0.0	0.0	0.0	91.3	**91.3**	**27.9**
Census Tract 9505, Block Group 2	1,538	9.3	0.0	0.0	0.0	0.0	0.0	3.3	87.4	**90.7**	**17.4**
Census Tract 9504, Block Group 1	2,489	18.9	4.6	0.0	0.0	0.0	0.0	1.3	75.2	**81.1**	**28.5**
Contractor Yard 2											
Kenedy County	***391***	***3.1***	***0.0***	***0.0***	***0.3***	***0.0***	***0.0***	***0.0***	***96.7***	***96.9***	***3.1***
Census Tract 9501, Block Group 1	391	3.1	0.0	0.0	0.0	0.0	0.0	0.0	96.7	**96.9**	**3.1**
Contractor Yard 3											
Cameron County	***422,135***	***8.8***	***0.4***	***0.1***	***0.7***	***0.0***	***0.0***	***0.2***	***89.8***	***91.2***	***25.7***
Census Tract 144.01, Block Group 1	2,806	1.0	0.0	0.0	0.5	0.0	0.0	0.0	98.5	**99.0**	4.8
Census Tract 144.01, Block Group 3	547	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.00	**100.00**	0.0
Census Tract 144.04, Block Group 2	884	23.1	0.0	0.0	0.0	0.0	0.0	0.0	76.9	**76.9**	**51.8**
Census Tract 142.02, Block Group 1	1,997	12.9	0.0	0.0	10.0	0.0	0.0	0.0	87.1	**87.1**	13.8
Census Tract 144.02, Block Group 1	2,742	17.6	0.0	0.0	10.0	0.0	0.0	0.0	72.4	**82.4**	3.8
Census Tract 144.02, Block Group 2	890	4.8	0.0	0.0	0.0	0.0	0.0	0.0	95.2	**95.2**	23.2
Census Tract 124.04, Block Group 2	2,015	2.8	0.0	0.0	0.0	0.0	0.0	0.8	96.4	**97.2**	**57.7**

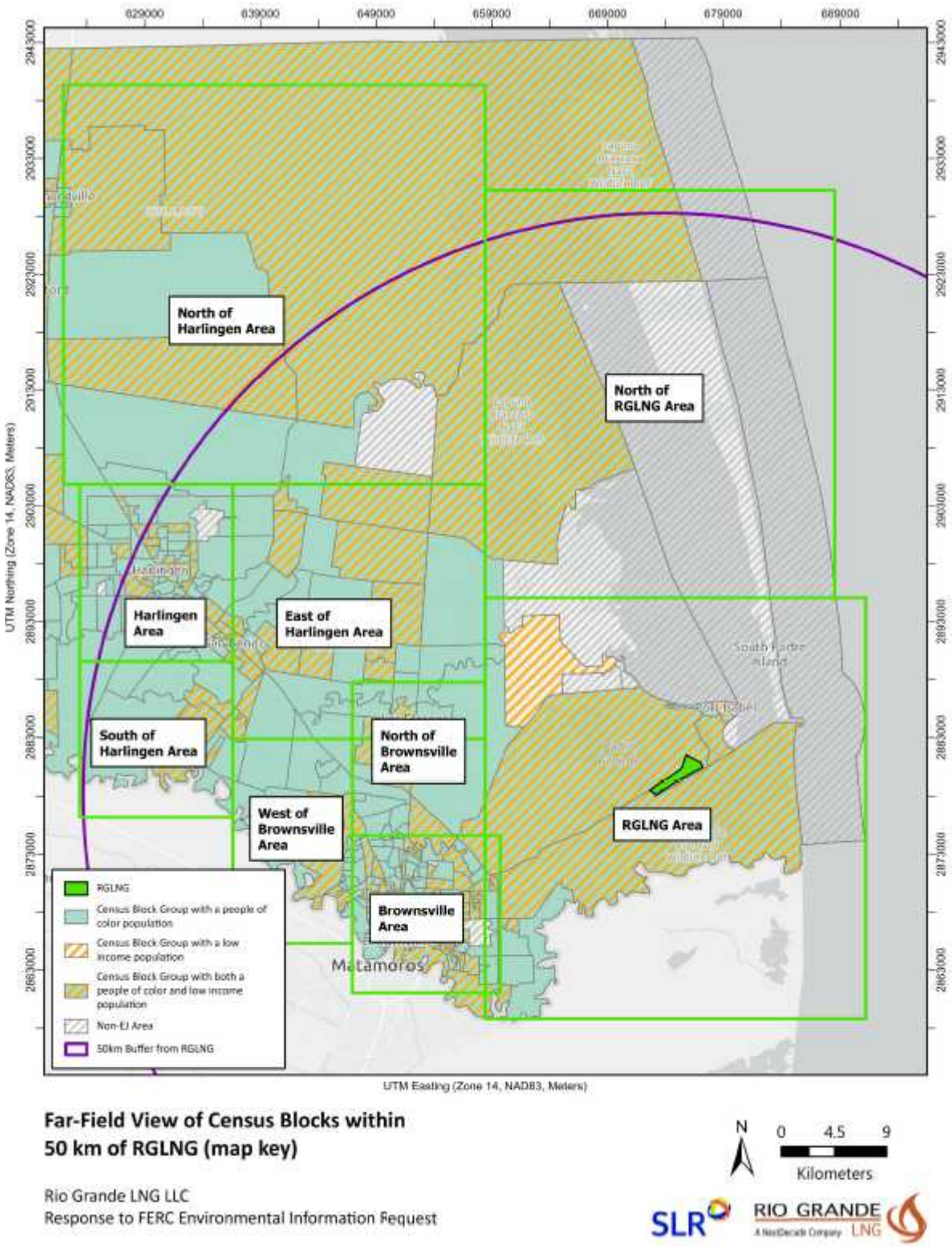
Sources:
Race and Ethnicity Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates, Hispanic or Latino Origin by Race. Table No. B03002. Accessed on May 3, 2022. Available online at:
https://data.census.gov/cedsci/table?text=B03002&g=0500000US48061%241500000,48489%241500000&tid=ACSDT5Y2020.B03002
Below Poverty Level Source: U.S. Census Bureau, 2020 ACS Poverty Status in the Past 12 Months by Household Type by Age of Householder. Table No. B17017. Accessed on May 3, 2022. Available online at:
https://data.census.gov/cedsci/table?q=B17017%3A%20POVERTY%20STATUS%20IN%20THE%20PAST%2012%20MONTHS%20BY%20HOUSEHOLD%20TYPE%20BY%20AGE%20OF%20HOUSEHOLDER&g=0500000US48061%241500000,48489%241500000&tid=ACSDT5Y2020.B17017
Notes:
[a] Meter Station HS4 is in this block group.
[b] Meter Station HS3 is in this block group.



Far-Field View of Census Blocks within 50 km of RGLNG

Rio Grande LNG LLC
Response to FERC Environmental Information Request

Figure 1



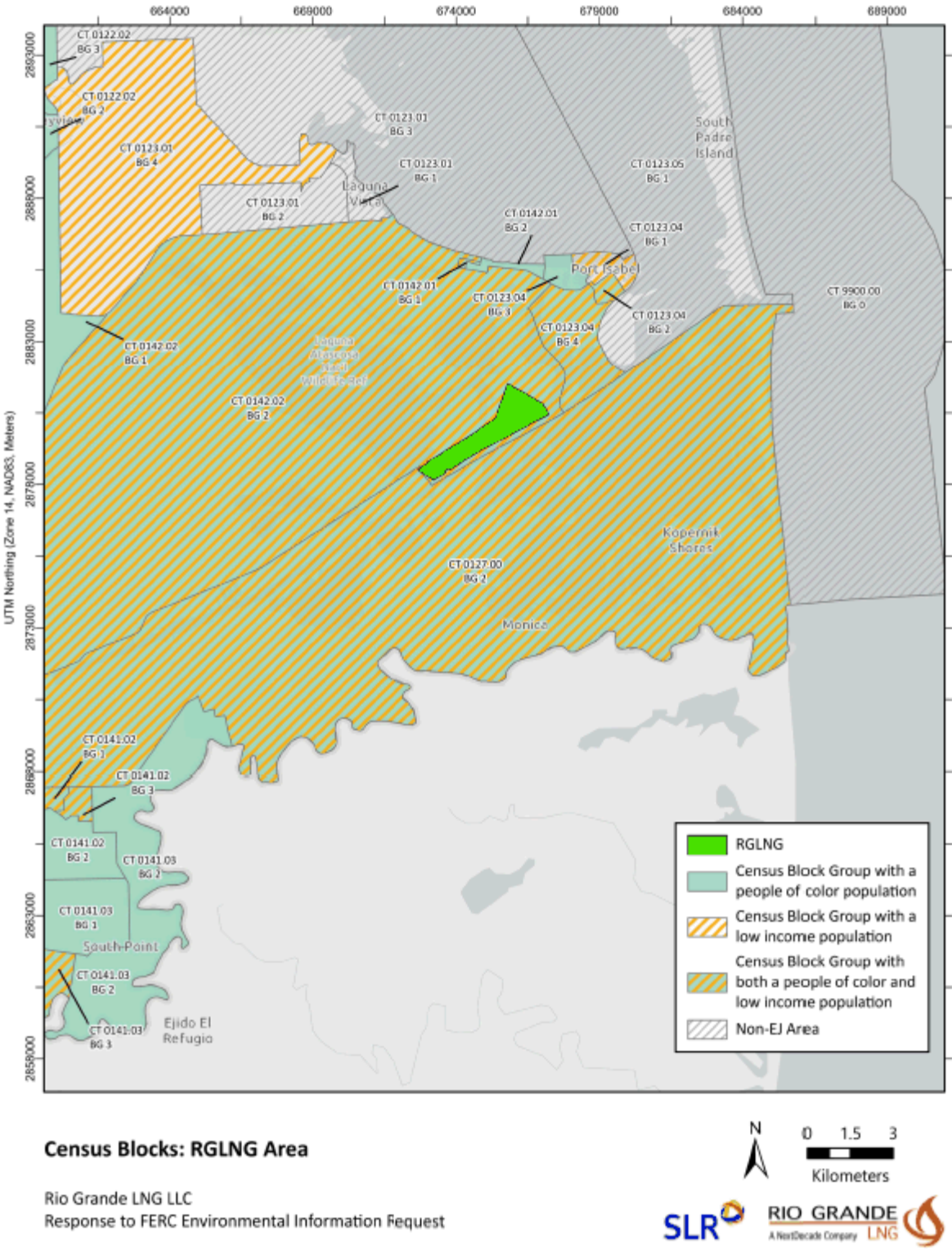
Far-Field View of Census Blocks within 50 km of RGLNG (map key)

Rio Grande LNG LLC
Response to FERC Environmental Information Request

N
0 4.5 9
Kilometers

SLR RIO GRANDE LNG

Figure 2


664000
669000
674000
679000
684000
689000
UTM Northing (Zone 14, NAD83, Meters)
South Padre Island
Laguna Vista
Port Isabel
Laguna Atascosa National Wildlife Refuge
Kopernik Shores
Monica
South Point
Ejido El Refugio
RGLNG
Census Block Group with a people of color population
Census Block Group with a low income population
Census Block Group with both a people of color and low income population
Non-EJ Area
N
0 1.5 3
Kilometers
Census Blocks: RGLNG Area
Rio Grande LNG LLC
Response to FERC Environmental Information Request
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RIO GRANDE LNG
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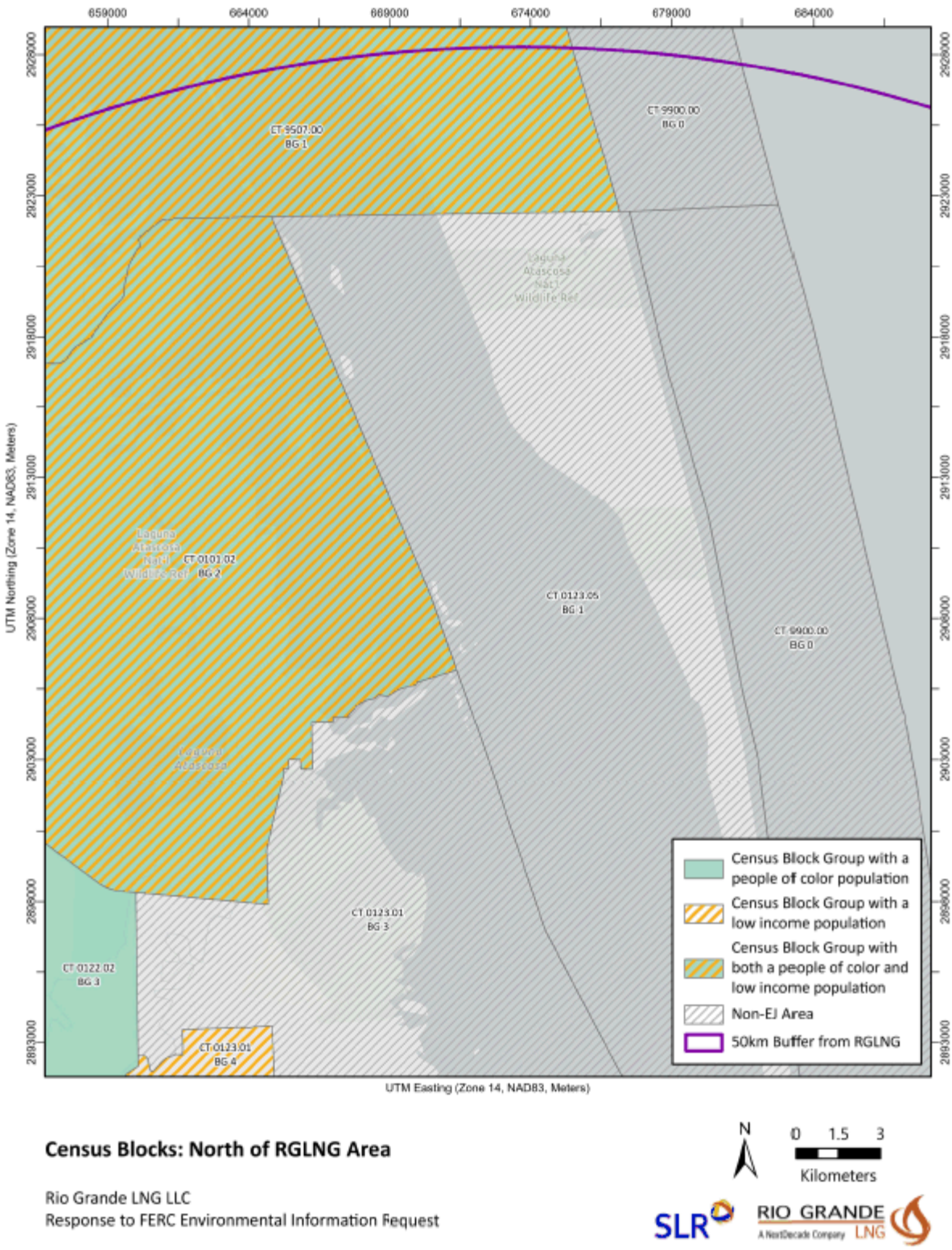
Figure 3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669000
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679000
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2923000
2918000
2913000
2908000
2903000
2898000
2893000
UTM Northing (Zone 14, NAD83, Meters)
UTM Easting (Zone 14, NAD83, Meters)
CT 9507.00 BG 1
CT 9900.00 BG 0
CT 0101.02 BG 2
CT 0123.05 BG 1
CT 9900.00 BG 0
CT 0123.01 BG 3
CT 0122.02 BG 3
CT 0123.01 BG 4
Census Block Group with a people of color population
Census Block Group with a low income population
Census Block Group with both a people of color and low income population
Non-EJ Area
50km Buffer from RGLNG
N
0 1.5 3
Kilometers
Census Blocks: North of RGLNG Area
Rio Grande LNG LLC
Response to FERC Environmental Information Request
SLR
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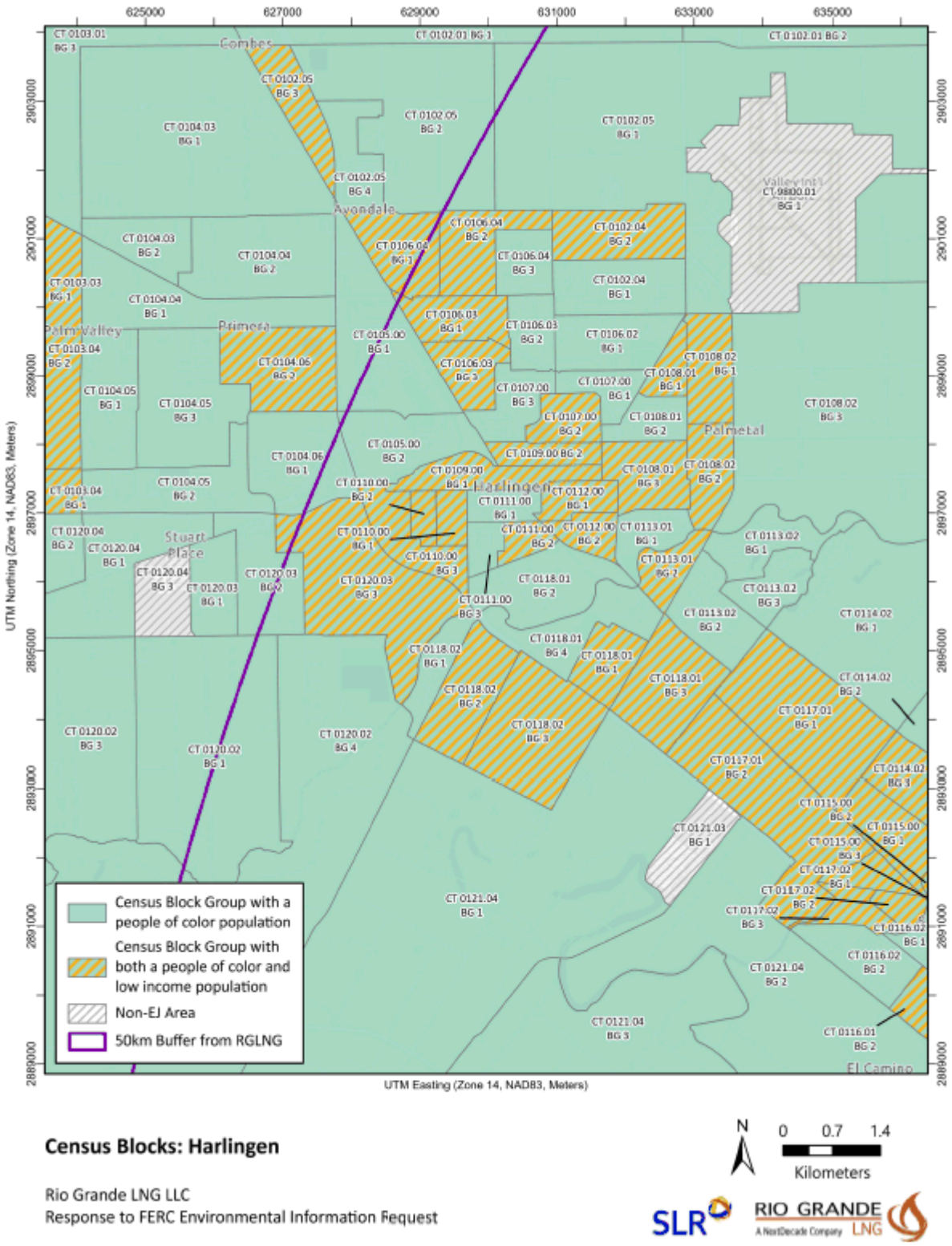
Figure 4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629000
631000
633000
635000
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2901000
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2895000
2893000
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2889000
UTM Northing (Zone 14, NAD83, Meters)
UTM Easting (Zone 14, NADB3, Meters)
Combes
Avondale
Primera
Palm Valley
Harlingen
Palmetal
Stuart Place
El Camino
Census Block Group with a people of color population
Census Block Group with both a people of color and low income population
Non-EJ Area
50km Buffer from RGLNG
Census Blocks: Harlingen
Rio Grande LNG LLC
Response to FERC Environmental Information Request
N
0 0.7 1.4
Kilometers
SLR
RIO GRANDE LNG
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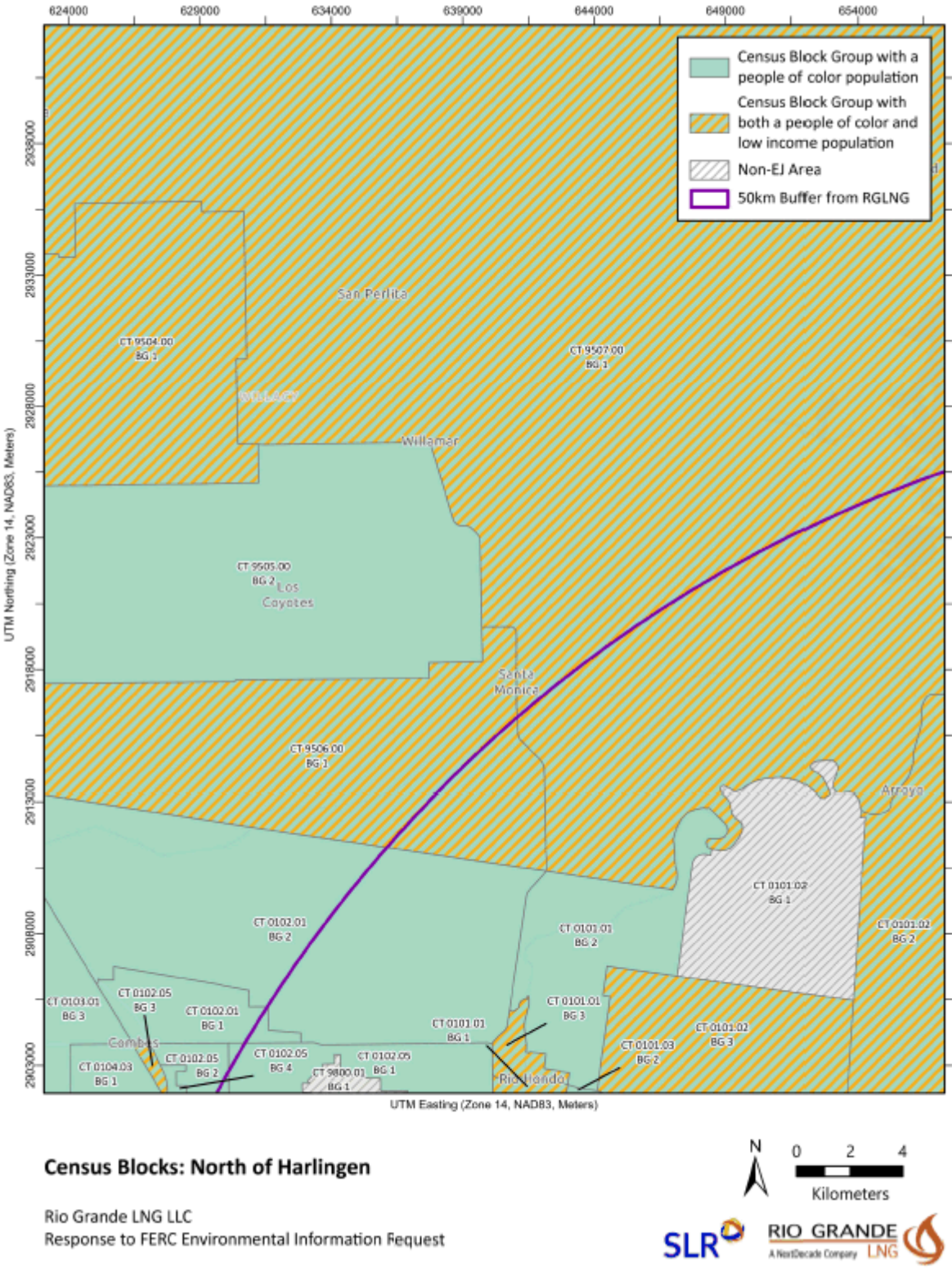
Figure 5



Census Blocks: North of Harlingen

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N
0 2 4
Kilometers

SLR
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Figure 6

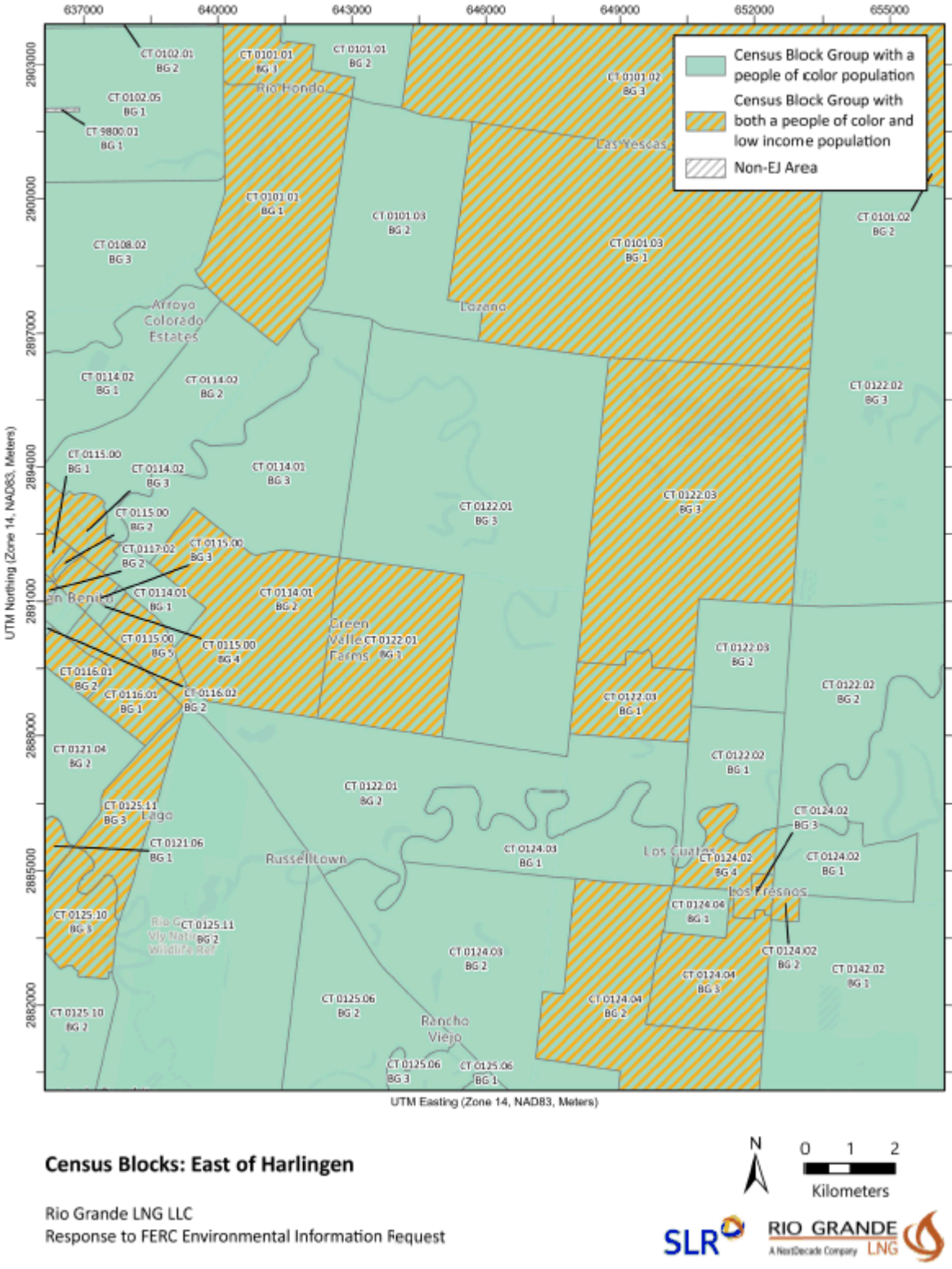
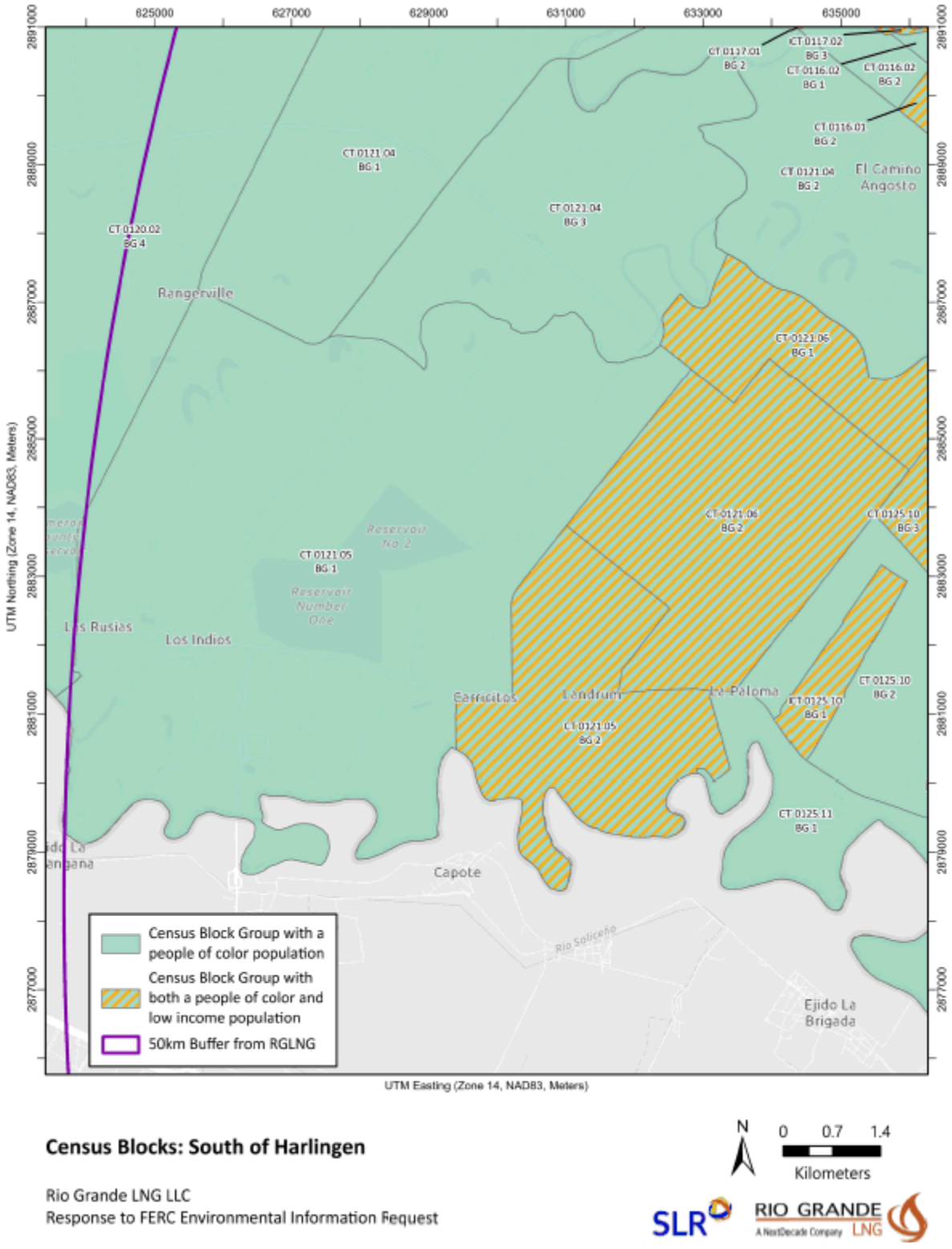

Census Block Group with a people of color population
Census Block Group with both a people of color and low income population
Non-EJ Area
637000
640000
643000
646000
649000
652000
655000
2903000
2900000
2897000
2894000
2891000
2888000
2885000
2882000
UTM Northing (Zone 14, NAD83, Meters)
UTM Easting (Zone 14, NAD83, Meters)
Rio Hondo
Las Yescas
Arroyo Colorado Estates
Lozano
Green Valley Farms
Russelltown
Rancho Viejo
Los Fresnos
Census Blocks: East of Harlingen
Rio Grande LNG LLC
Response to FERC Environmental Information Request
N
0 1 2
Kilometers
SLR
RIO GRANDE LNG
A NextDecade Company

Figure 7



Census Blocks: South of Harlingen

Rio Grande LNG LLC
Response to FERC Environmental Information Request

SLR RIO GRANDE LNG A NextDecade Company

Figure 8

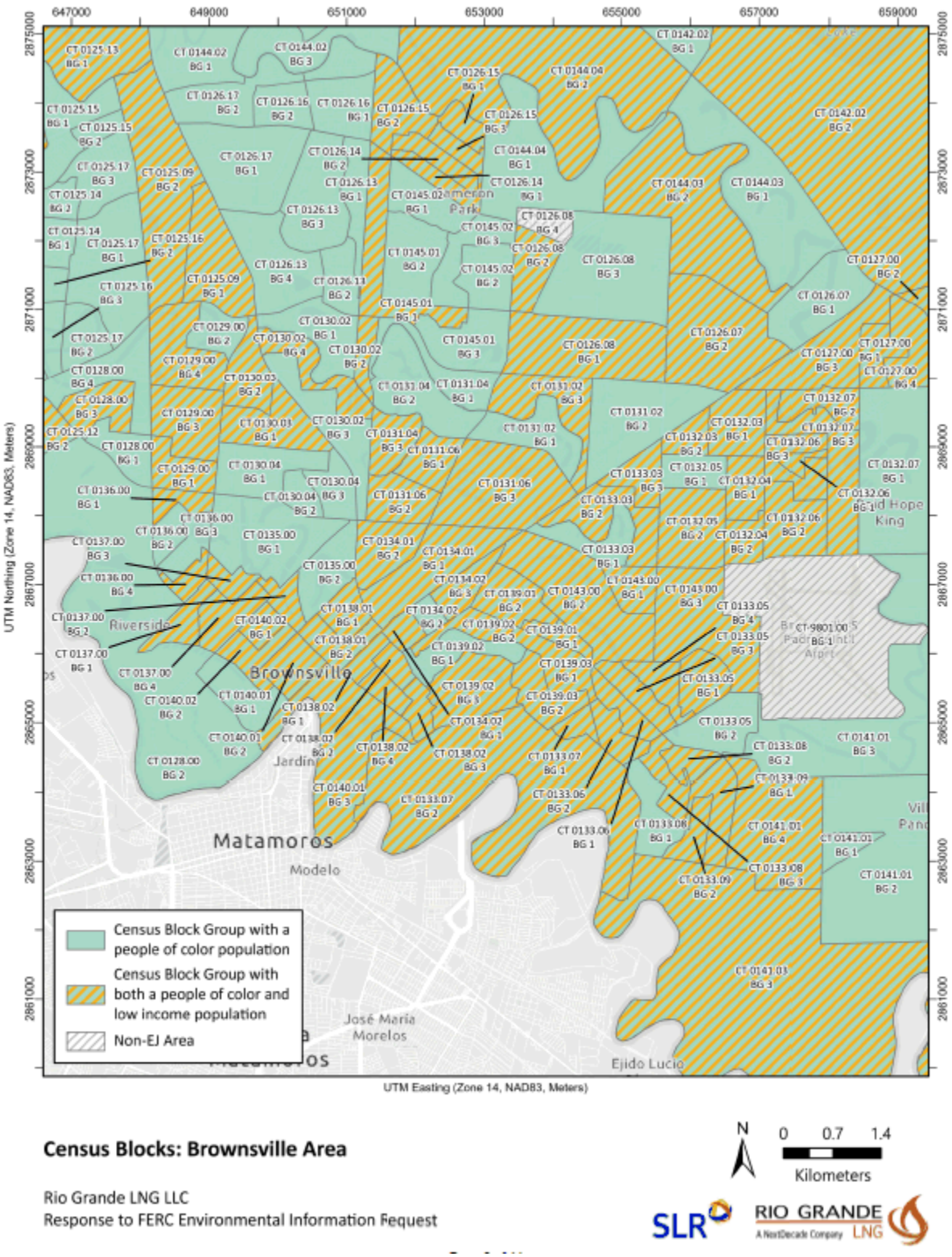

UTM Northing (Zone 14, NAD83, Meters)
UTM Easting (Zone 14, NAD83, Meters)
Census Block Group with a people of color population
Census Block Group with both a people of color and low income population
Non-EJ Area
Brownsville
Matamoros
Modelo
Riverside
Jardin
José María Morelos
Ejido Lucio
Census Blocks: Brownsville Area
Rio Grande LNG LLC
Response to FERC Environmental Information Request
N
0 0.7 1.4
Kilometers
SLR
RIO GRANDE LNG

Figure 9

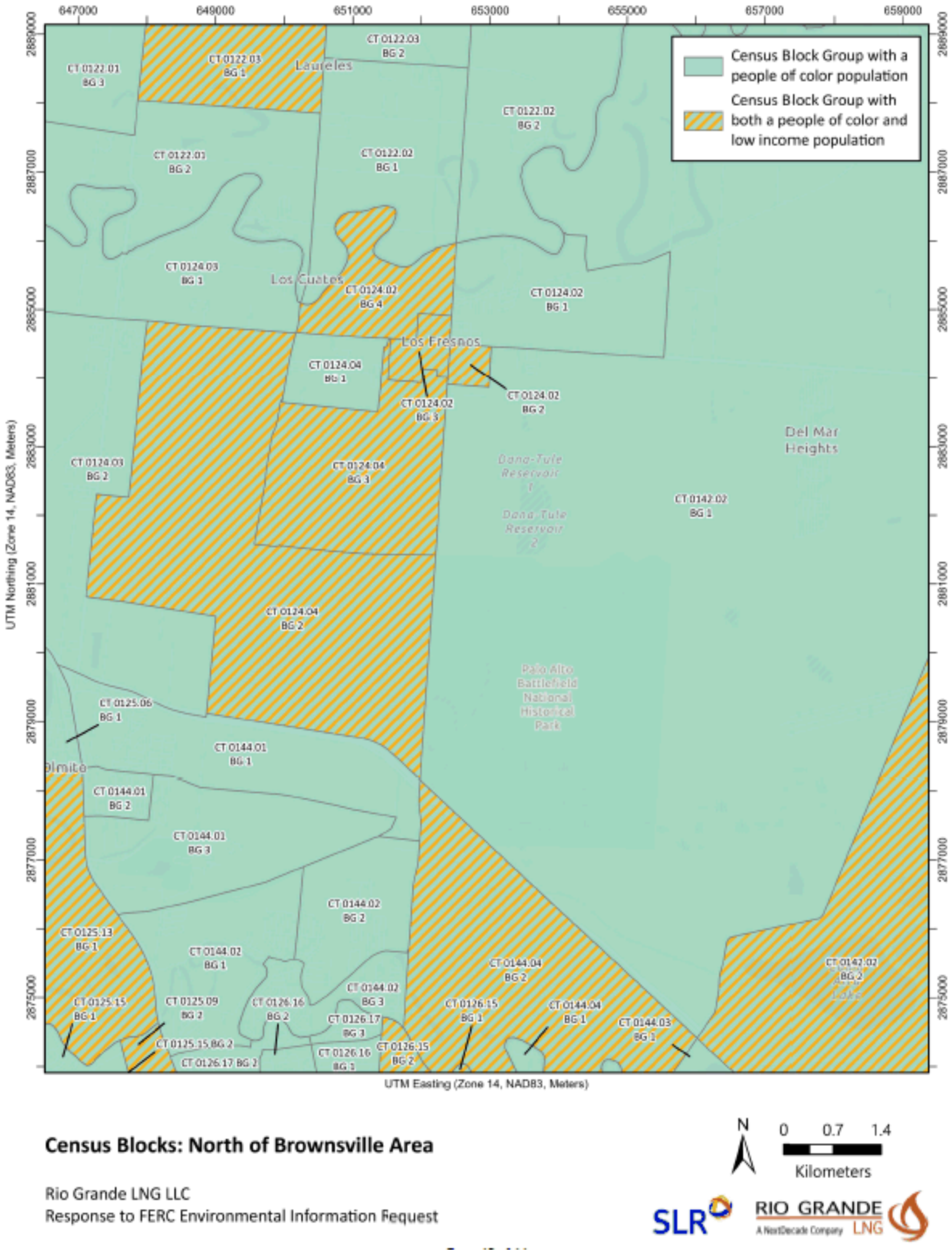

Census Block Group with a people of color population
Census Block Group with both a people of color and low income population
UTM Northing (Zone 14, NAD83, Meters)
UTM Easting (Zone 14, NAD83, Meters)
Census Blocks: North of Brownsville Area
Rio Grande LNG LLC
Response to FERC Environmental Information Request
N
0 0.7 1.4
Kilometers
SLR
RIO GRANDE LNG

Figure 10

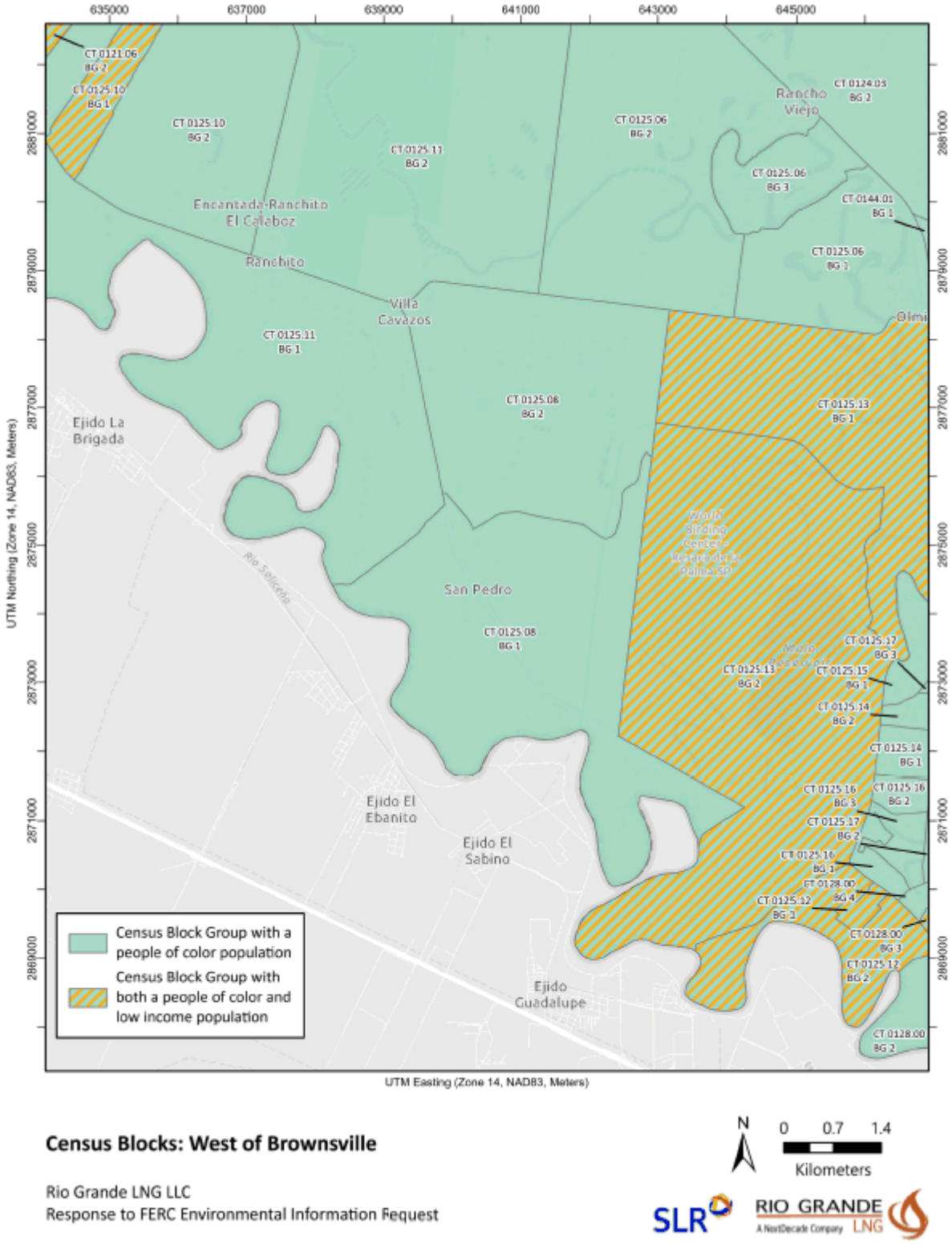

635000
637000
639000
641000
643000
645000
2881000
2879000
2877000
2875000
2873000
2871000
2869000
UTM Northing (Zone 14, NAD83, Meters)
UTM Easting (Zone 14, NAD83, Meters)
Rancho Viejo
Encantada-Ranchito El Calaboz
Ranchito
Villa Cavazos
Olmito
Ejido La Brigada
San Pedro
Ejido El Ebanito
Ejido El Sabino
Ejido Guadalupe
Rio Salicete
Census Block Group with a people of color population
Census Block Group with both a people of color and low income population
Census Blocks: West of Brownsville
Rio Grande LNG LLC
Response to FERC Environmental Information Request
N
0 0.7 1.4
Kilometers
SLR
RIO GRANDE LNG

Figure 11

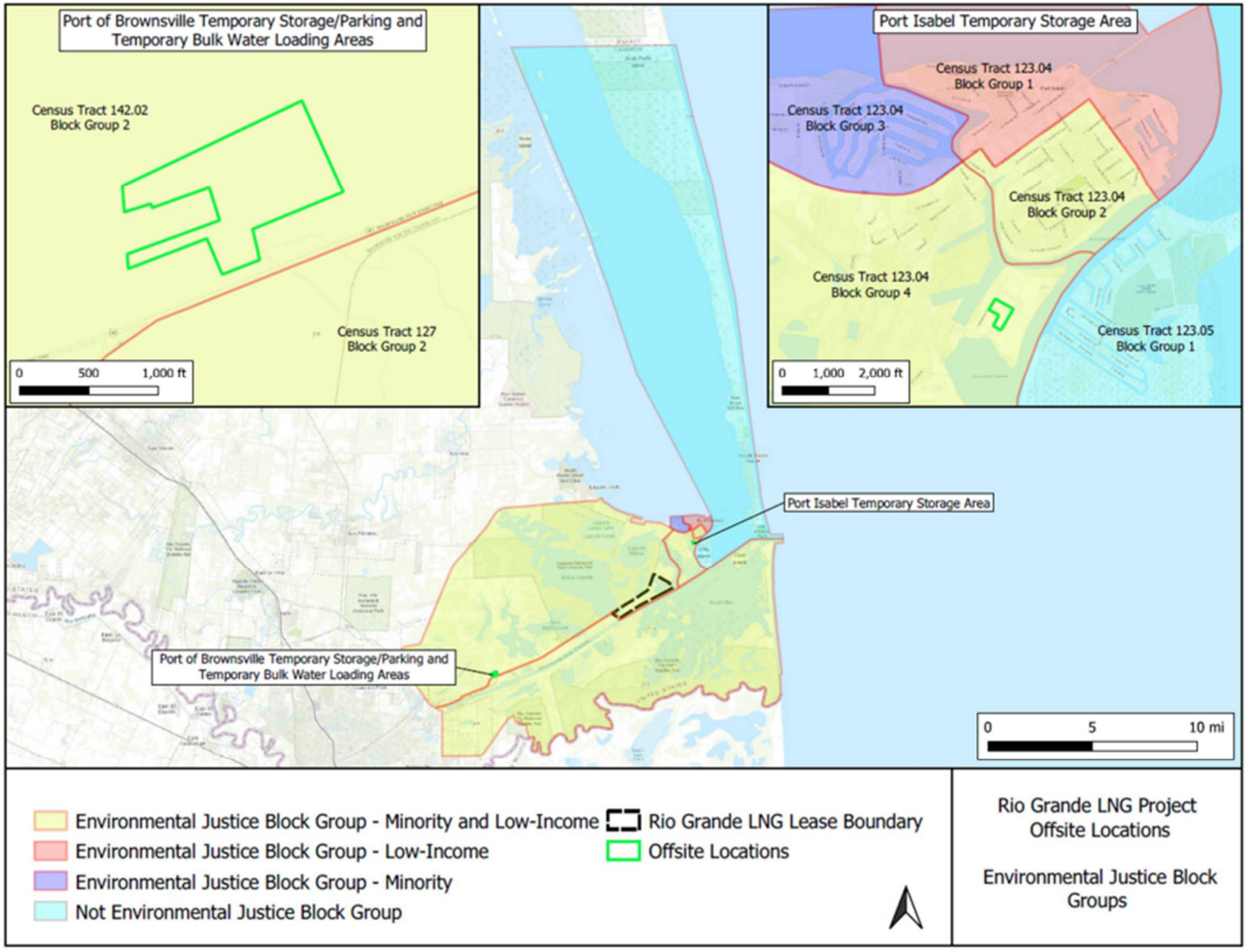

Port of Brownsville Temporary Storage/Parking and Temporary Bulk Water Loading Areas
Census Tract 142.02 Block Group 2
Census Tract 127 Block Group 2
0 500 1,000 ft
Port Isabel Temporary Storage Area
Census Tract 123.04 Block Group 1
Census Tract 123.04 Block Group 3
Census Tract 123.04 Block Group 2
Census Tract 123.04 Block Group 4
Census Tract 123.05 Block Group 1
0 1,000 2,000 ft
Port Isabel Temporary Storage Area
Port of Brownsville Temporary Storage/Parking and Temporary Bulk Water Loading Areas
0 5 10 mi
Environmental Justice Block Group - Minority and Low-Income
Environmental Justice Block Group - Low-Income
Environmental Justice Block Group - Minority
Not Environmental Justice Block Group
Rio Grande LNG Lease Boundary
Offsite Locations
Rio Grande LNG Project Offsite Locations
Environmental Justice Block Groups

Figure 12

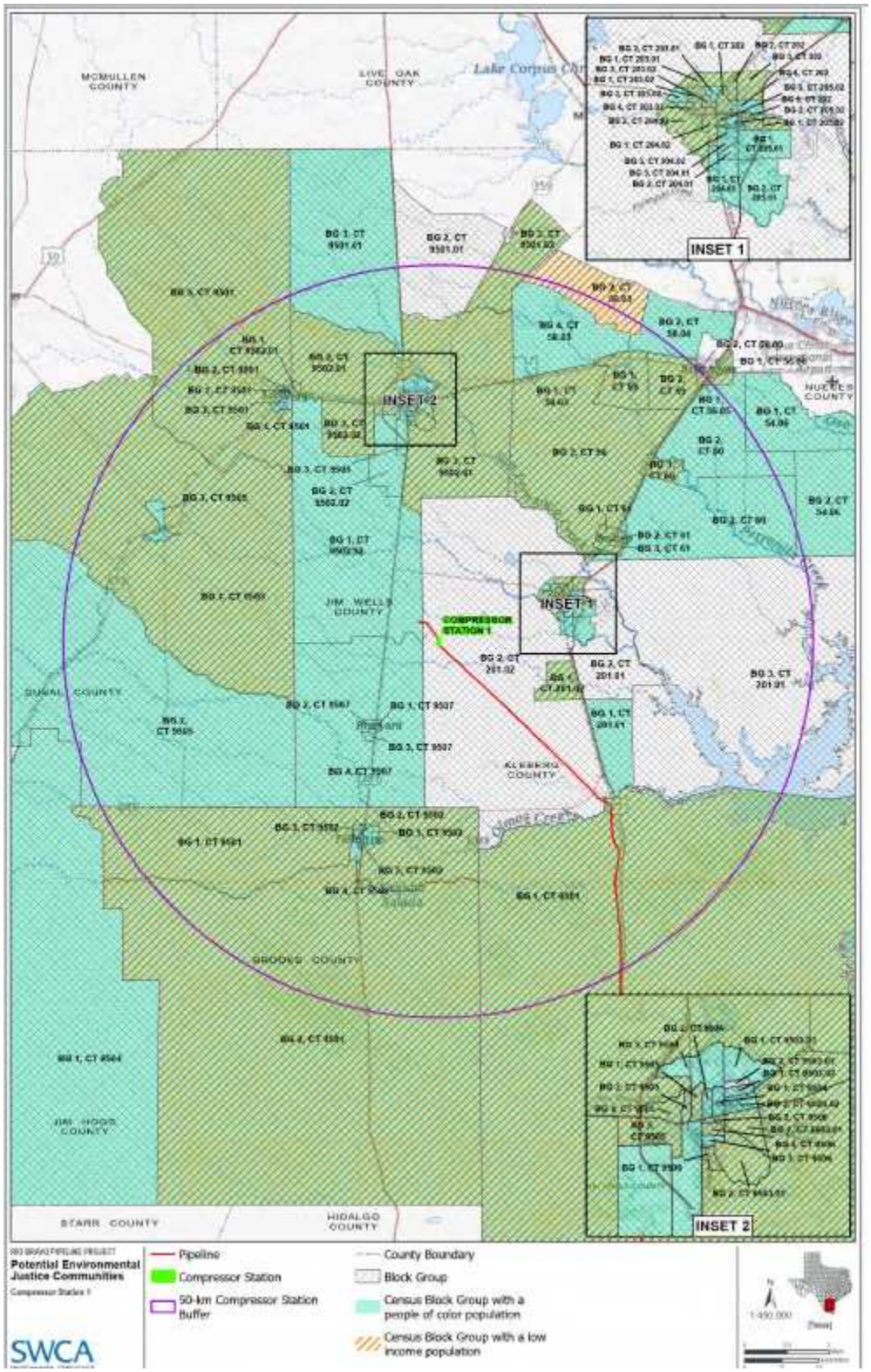

INSET 1
INSET 2
INSET 1
INSET 2
COMPRESSOR STATION 1
MCMULLEN COUNTY
LIVE OAK COUNTY
JIM WELLS COUNTY
KLEBERG COUNTY
BROOKS COUNTY
JIM HOGG COUNTY
STARR COUNTY
HIDALGO COUNTY
NUECES COUNTY
DUVAL COUNTY
Potential Environmental Justice Communities
Pipeline
Compressor Station
50-km Compressor Station Buffer
County Boundary
Block Group
Census Block Group with a people of color population
Census Block Group with a low income population
SWCA

Figure 13

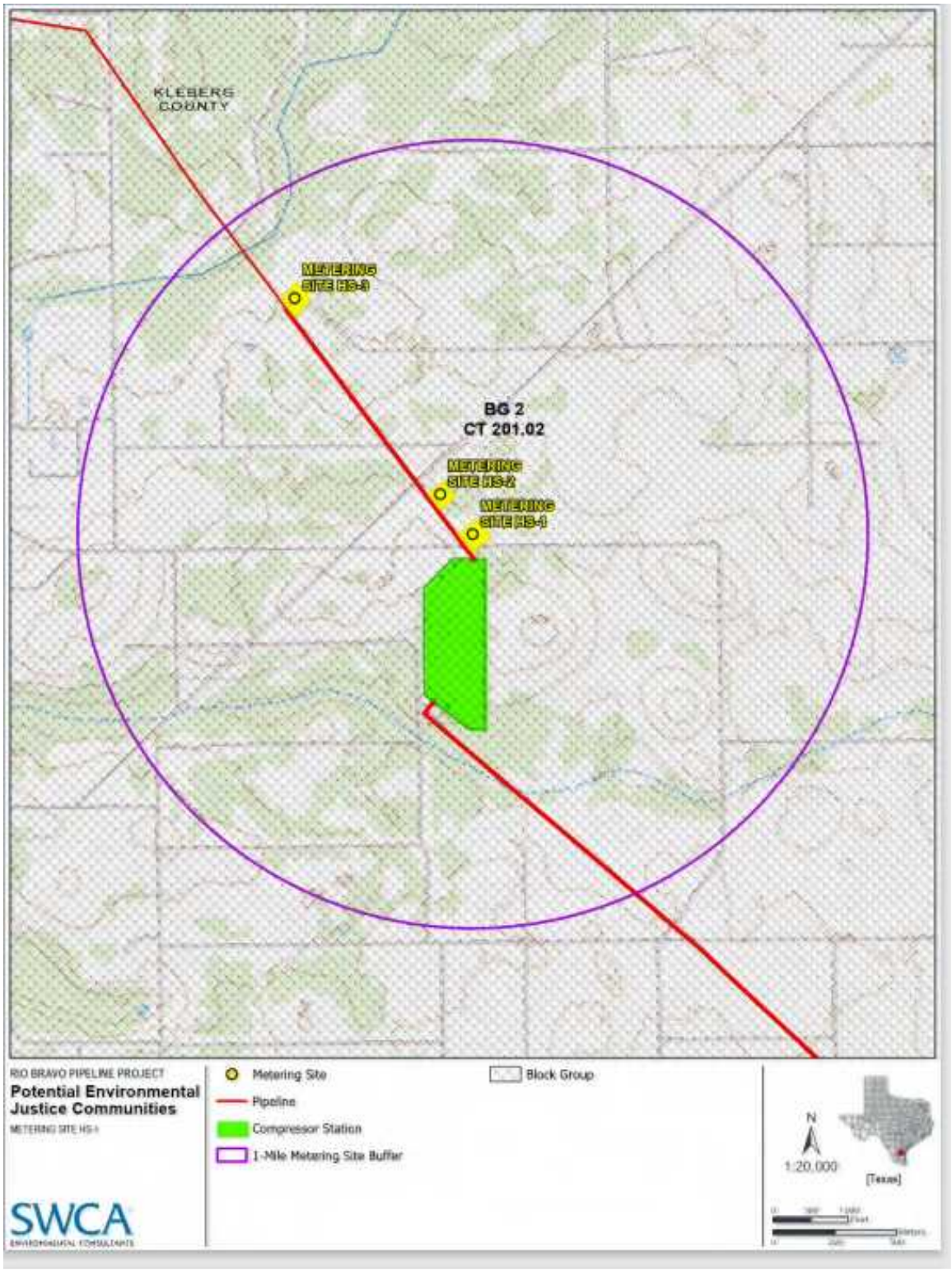

KLEBERG COUNTY
METERING SITE HS-3
BG 2
CT 201.02
METERING SITE HS-2
METERING SITE HS-1
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
METERING SITE HS-1
SWCA
Metering Site
Pipeline
Compressor Station
1-Mile Metering Site Buffer
Block Group
N
1:20,000
[Texas]

Figure 14

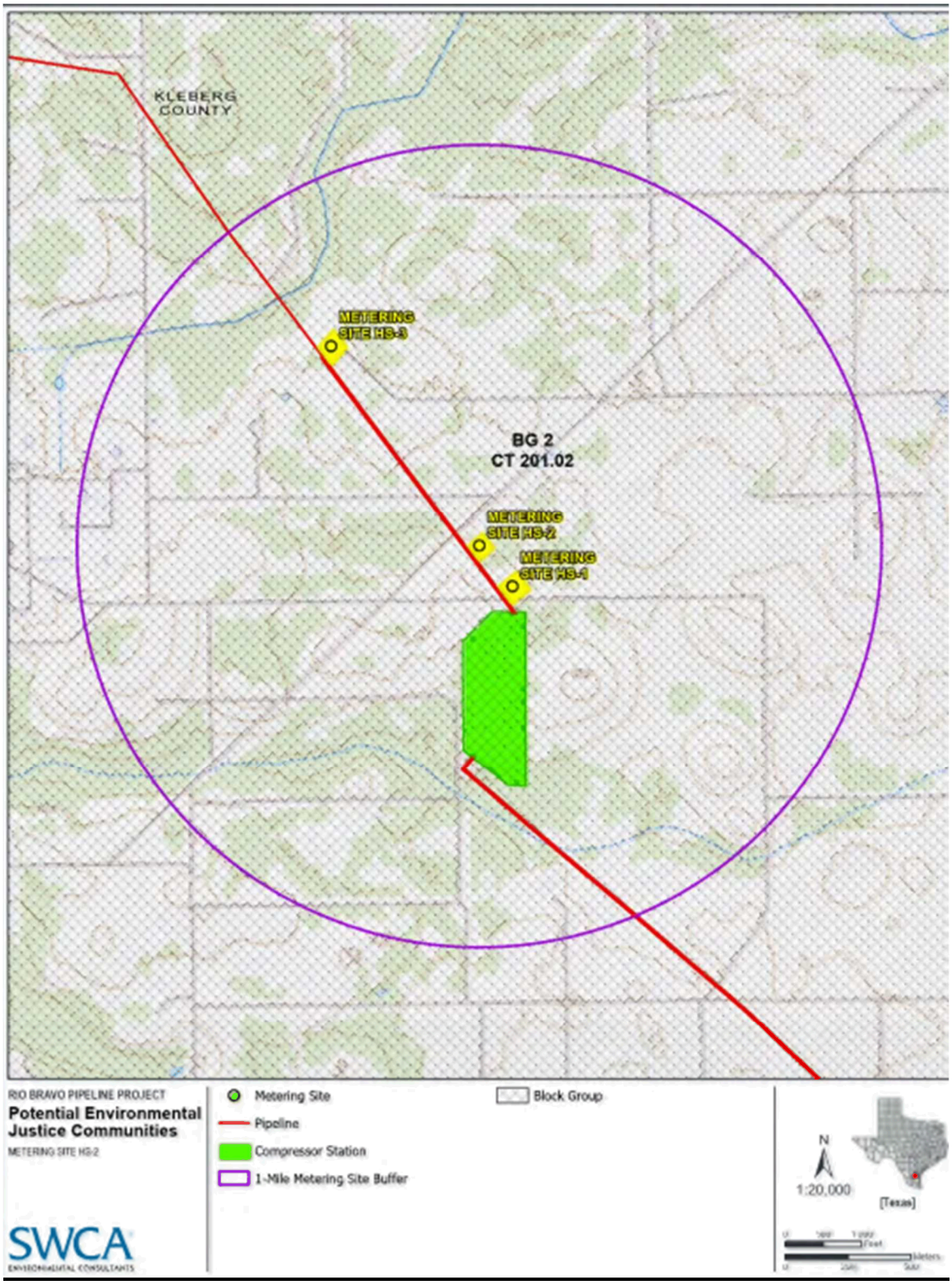

KLEBERG COUNTY
METERING SITE HS-3
BG 2
CT 201.02
METERING SITE HS-2
METERING SITE HS-1
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
METERING SITE HS-2
SWCA
Metering Site
Pipeline
Compressor Station
1-Mile Metering Site Buffer
Block Group
N
1:20,000
[Texas]

Figure 15

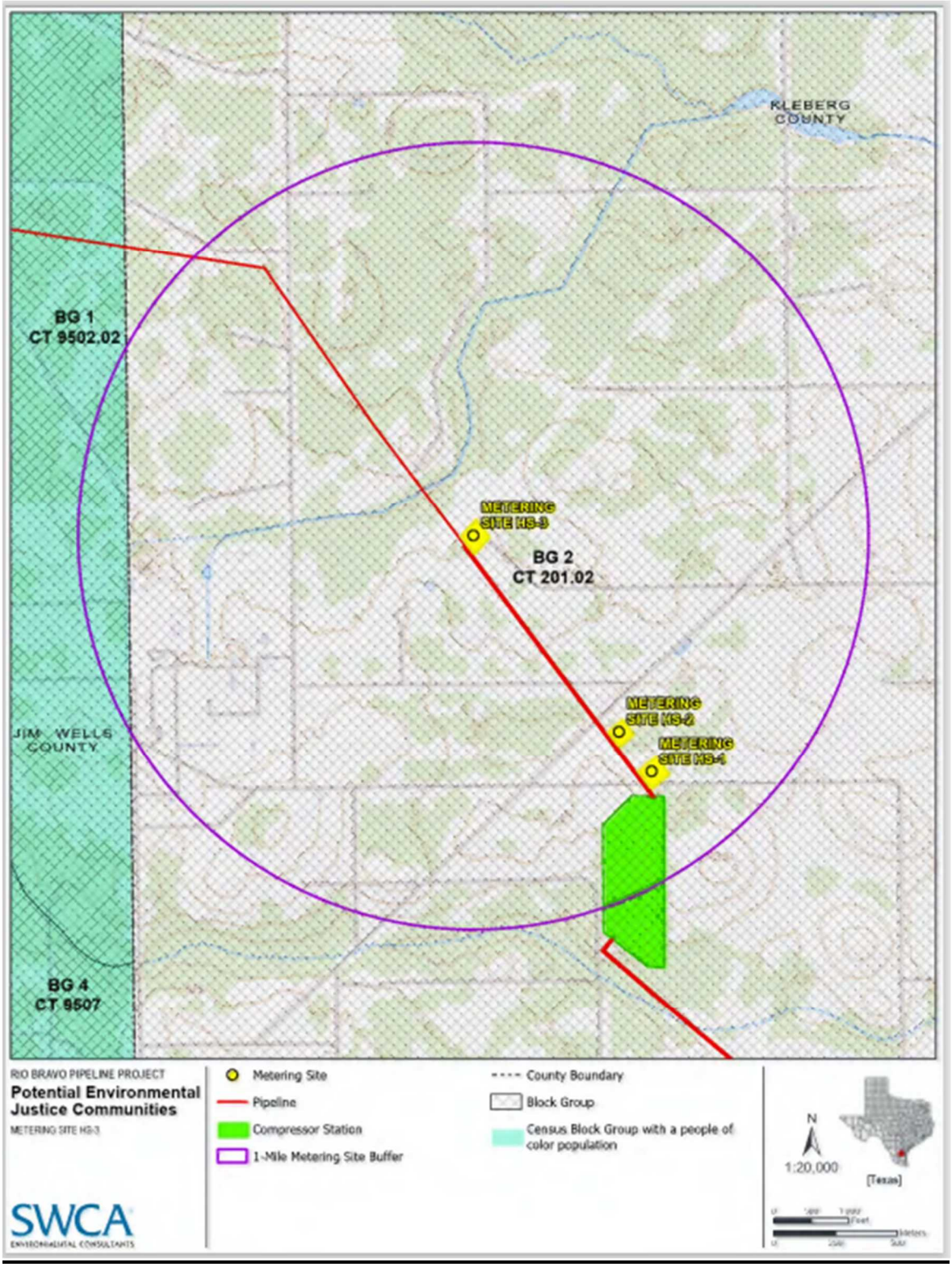

KLEBERG COUNTY
BG 1
CT 9502.02
METERING SITE HS-3
BG 2
CT 201.02
METERING SITE HS-2
METERING SITE HS-1
JIM WELLS COUNTY
BG 4
CT 9507
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
METERING SITE HS-3
Metering Site
Pipeline
Compressor Station
1-Mile Metering Site Buffer
County Boundary
Block Group
Census Block Group with a people of color population
N
1:20,000
[Texas]
SWCA
ENVIRONMENTAL CONSULTANTS

Figure 16

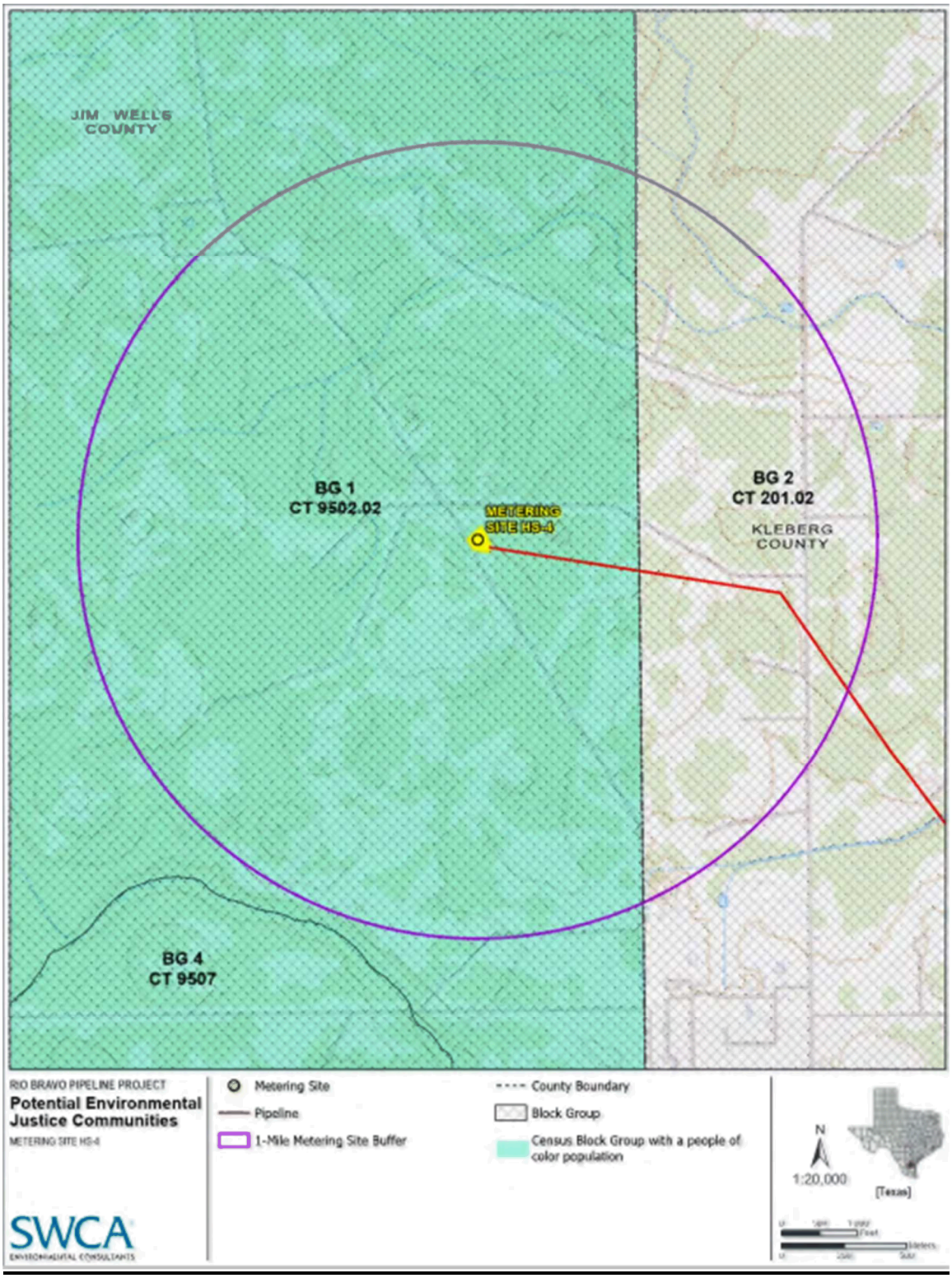

JIM WELLS COUNTY
BG 1
CT 9502.02
METERING SITE HS-4
BG 2
CT 201.02
KLEBERG COUNTY
BG 4
CT 9507
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
METERING SITE HS-4
Metering Site
Pipeline
1-Mile Metering Site Buffer
County Boundary
Block Group
Census Block Group with a people of color population
N
1:20,000
[Texas]
SWCA

Figure 17

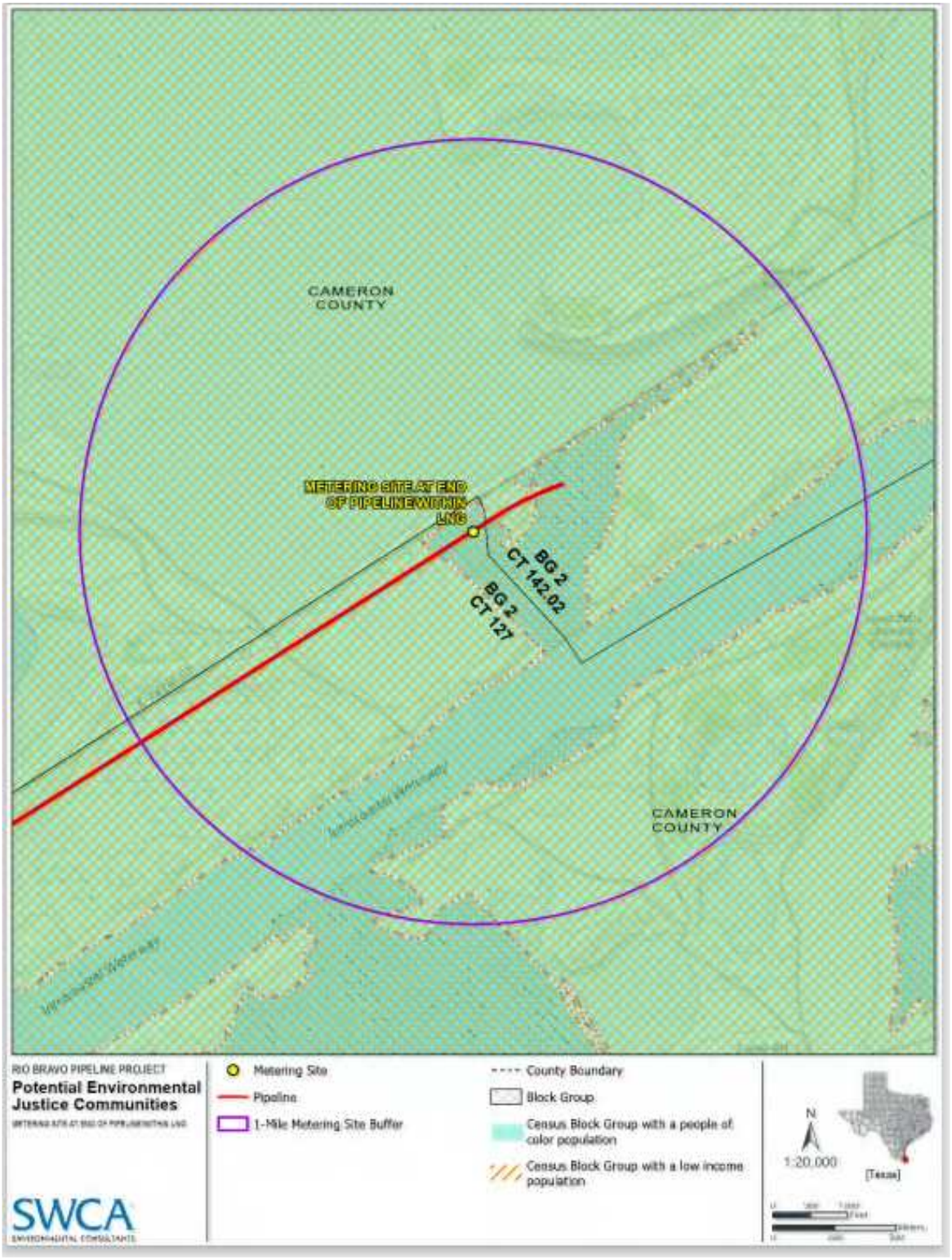

CAMERON COUNTY
METERING SITE AT END OF PIPELINE WITHIN LNG
BG 2 CT 142.02
BG 2 CT 127
CAMERON COUNTY
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
SWCA
Metering Site
Pipeline
1-Mile Metering Site Buffer
County Boundary
Block Group
Census Block Group with a people of color population
Census Block Group with a low income population
N
1:20,000
[Texas]

Figure 18

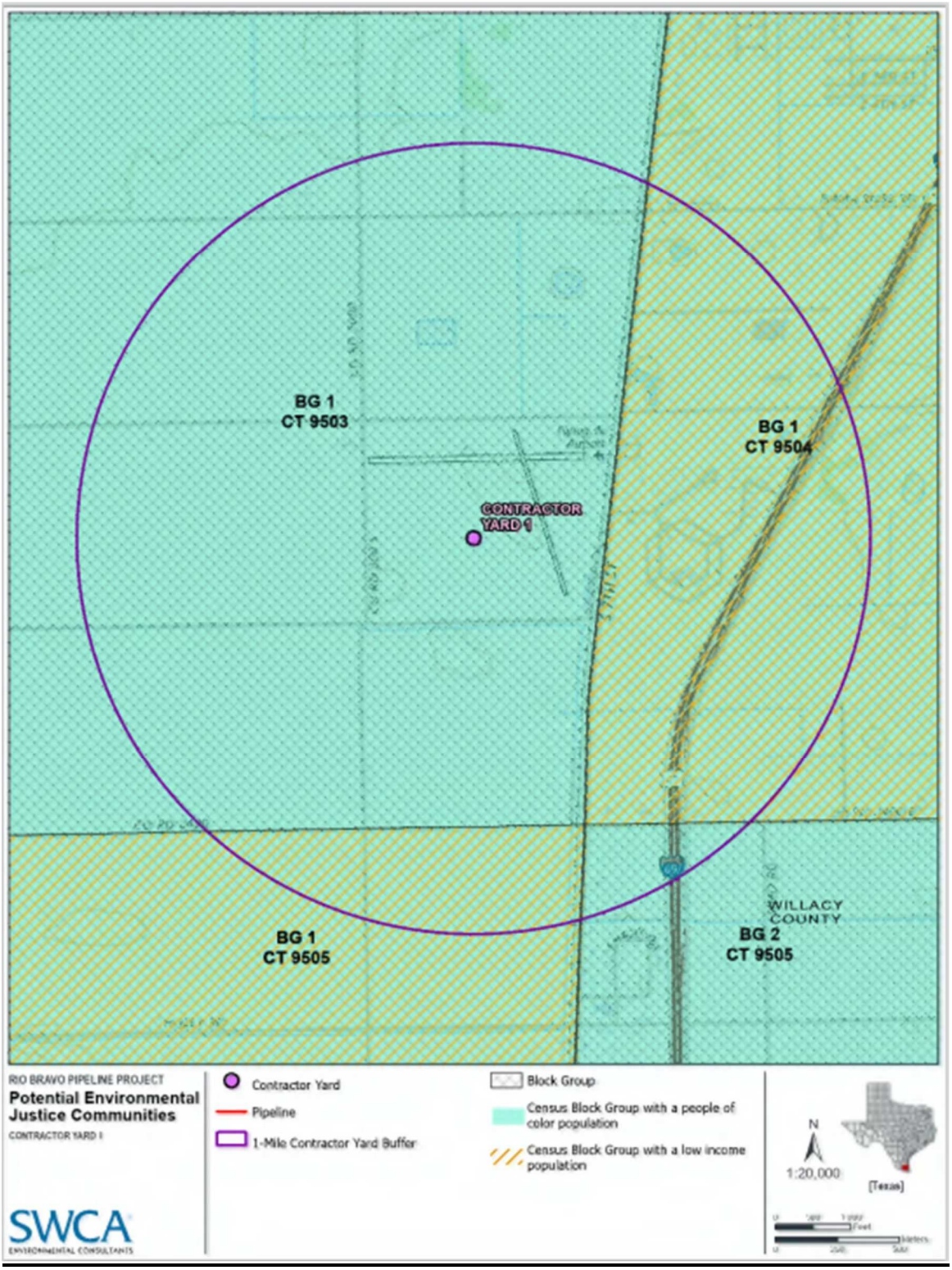

BG 1
CT 9503
BG 1
CT 9504
CONTRACTOR
YARD 1
BG 1
CT 9505
WILLACY
COUNTY
BG 2
CT 9505
RIO BRAVO PIPELINE PROJECT
Potential Environmental
Justice Communities
CONTRACTOR YARD 1
SWCA
ENVIRONMENTAL CONSULTANTS
Contractor Yard
Pipeline
1-Mile Contractor Yard Buffer
Block Group
Census Block Group with a people of color population
Census Block Group with a low income population
N
1:20,000
[Texas]

Figure 19

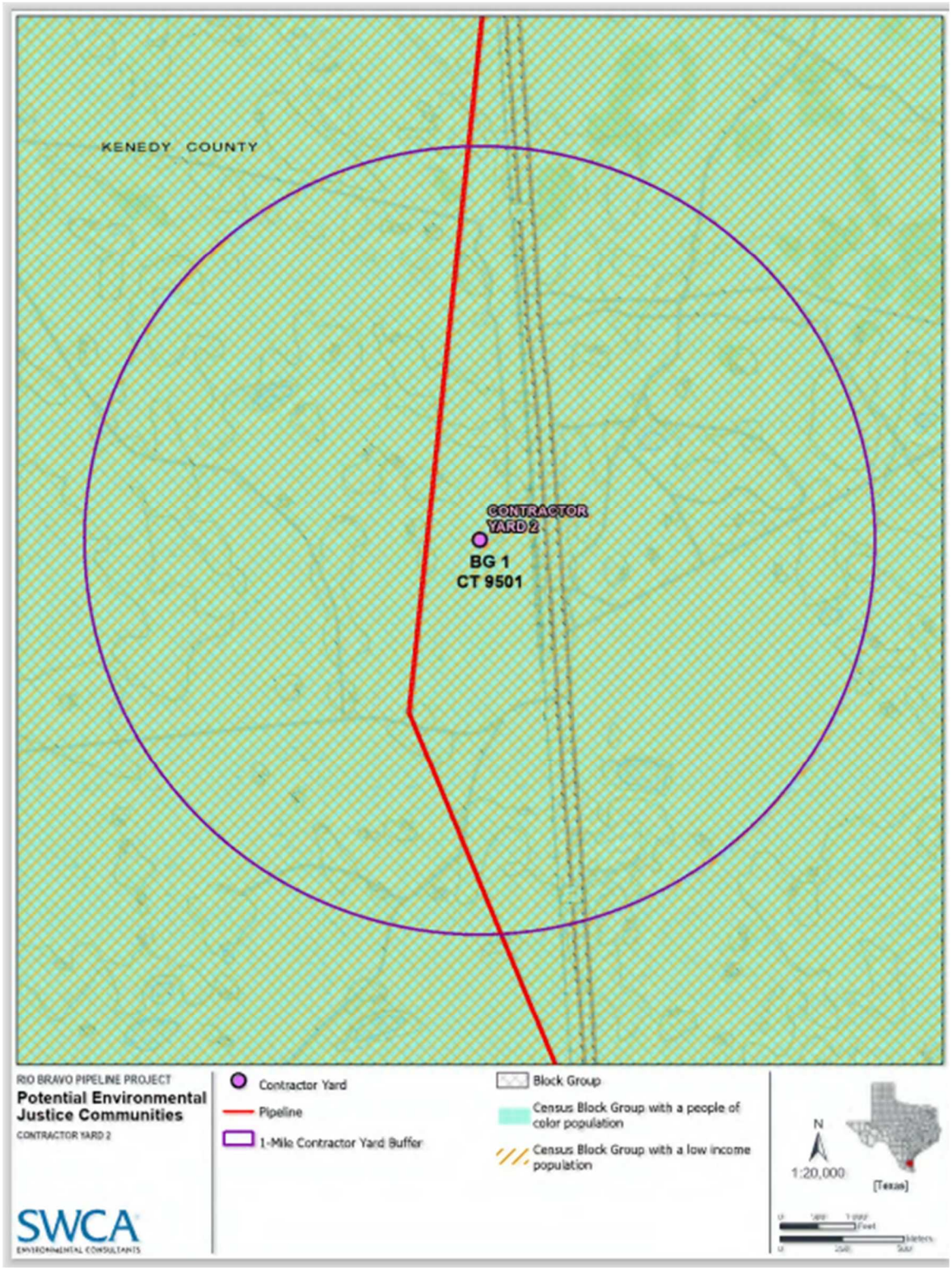

KENEDY COUNTY
CONTRACTOR YARD 2
BG 1
CT 9501
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
CONTRACTOR YARD 2
Contractor Yard
Pipeline
1-Mile Contractor Yard Buffer
Block Group
Census Block Group with a people of color population
Census Block Group with a low income population
N
1:20,000
[Texas]
SWCA
ENVIRONMENTAL CONSULTANTS

Figure 20

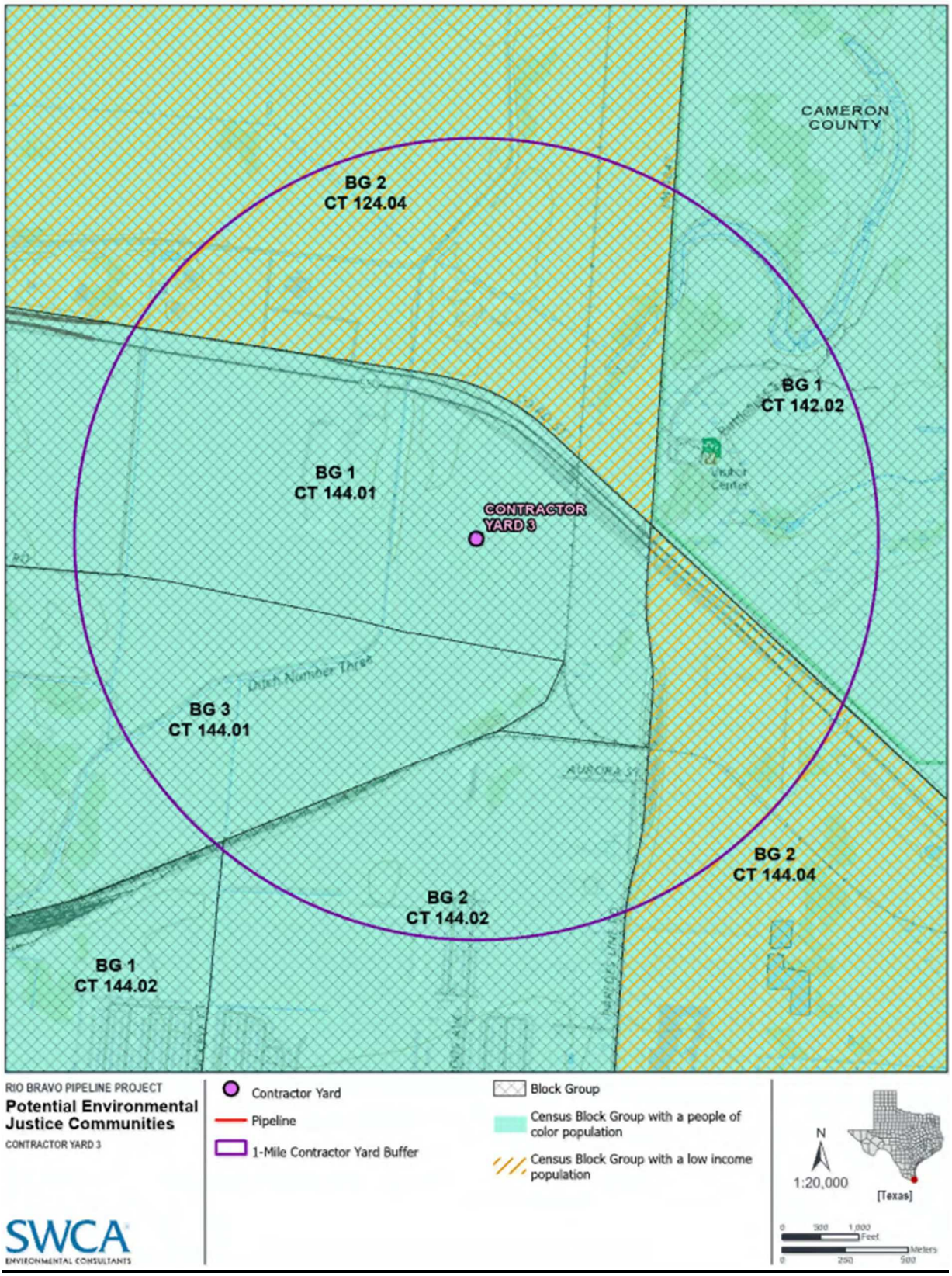

CAMERON COUNTY
BG 2
CT 124.04
BG 1
CT 142.02
BG 1
CT 144.01
CONTRACTOR YARD 3
BG 3
CT 144.01
BG 2
CT 144.04
BG 2
CT 144.02
BG 1
CT 144.02
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
CONTRACTOR YARD 3
Contractor Yard
Pipeline
1-Mile Contractor Yard Buffer
Block Group
Census Block Group with a people of color population
Census Block Group with a low income population
N
1:20,000
[Texas]
SWCA
ENVIRONMENTAL CONSULTANTS

Figure 21

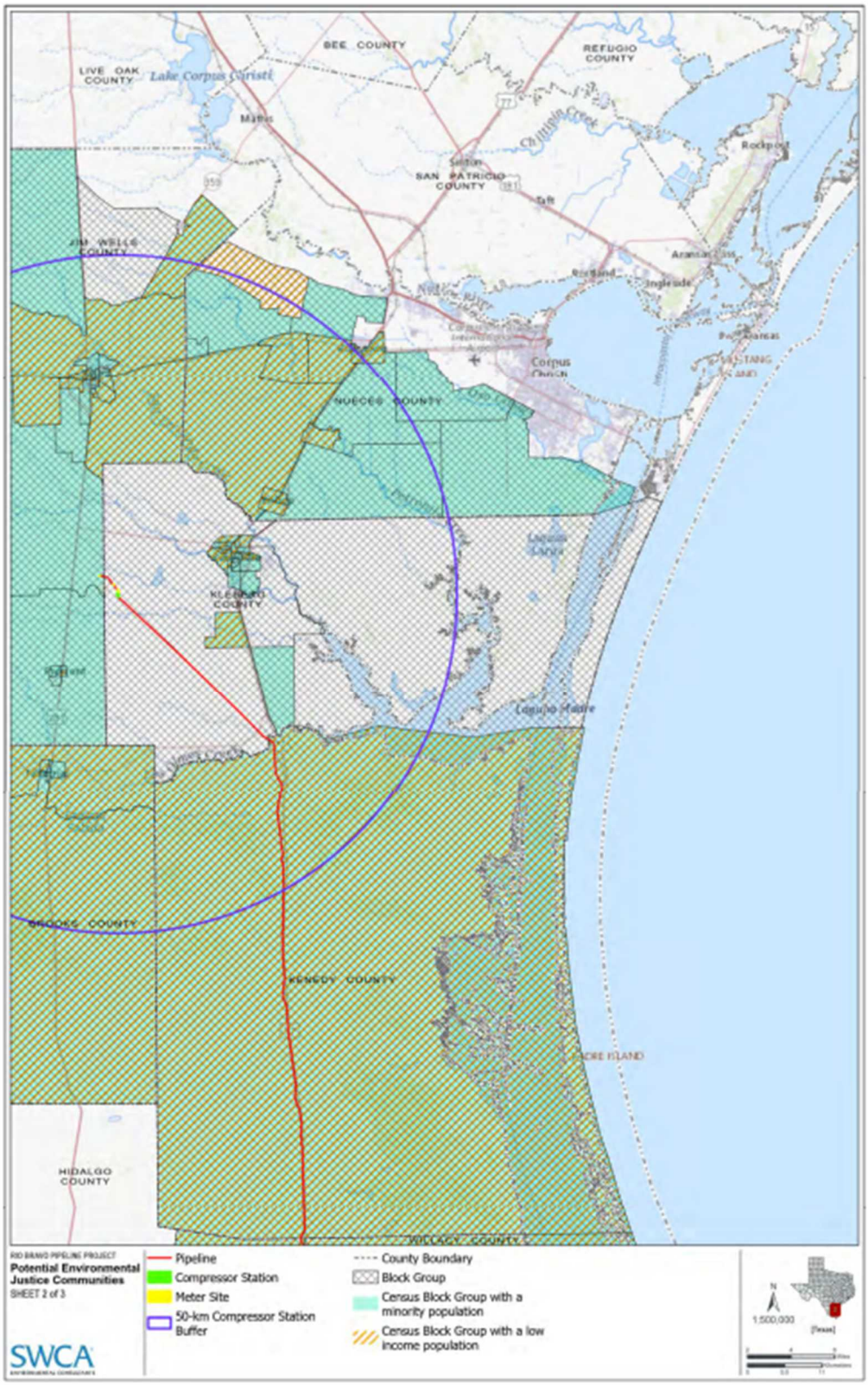

BEE COUNTY
REFUGIO COUNTY
LIVE OAK COUNTY
Lake Corpus Christi
SAN PATRICIO COUNTY
JIM WELLS COUNTY
NUECES COUNTY
KLEBERG COUNTY
BROOKS COUNTY
KENEDY COUNTY
HIDALGO COUNTY
WILLACY COUNTY
PADRE ISLAND
Corpus Christi
Rockport
Ingleside
Aransas Pass
Port Aransas
MUSTANG ISLAND
Kingsville
Raymondville
RIO BRAVO PIPELINE PROJECT
Potential Environmental Justice Communities
SHEET 2 of 3
Pipeline
Compressor Station
Meter Site
50-km Compressor Station Buffer
County Boundary
Block Group
Census Block Group with a minority population
Census Block Group with a low income population
1,500,000
SWCA

Figure 22

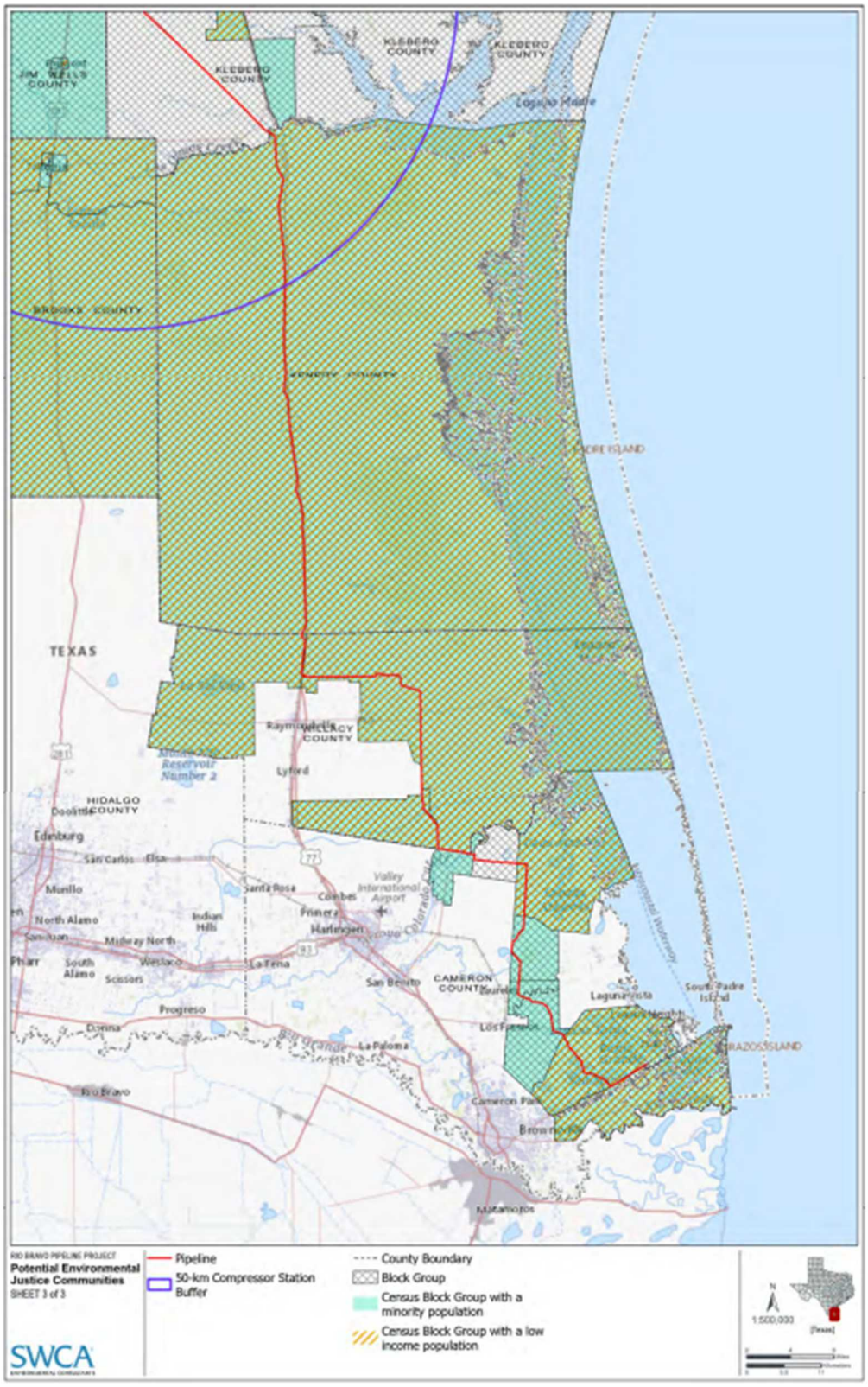

TEXAS
KLEBERG COUNTY
BROOKS COUNTY
HIDALGO COUNTY
CAMERON COUNTY
WILLACY COUNTY
Edinburg
Mission
Pharr
San Juan
Alamo
Weslaco
Donna
Progreso
La Feria
San Benito
Harlingen
Brownsville
Matamoros
Port Isabel
South Padre Island
Laguna Madre
Rio Grande
Pipeline
50-km Compressor Station Buffer
County Boundary
Block Group
Census Block Group with a minority population
Census Block Group with a low income population
Potential Environmental Justice Communities
SHEET 3 of 3
SWCA

Figure 23

Appendix C

Commission Staff's Environmental Justice Analysis of Potential Public Safety Impacts and Emergency Response Plans for Rio Grande LNG Terminal and Liquefied Natural Gas (LNG) Marine Vessels

A. Onsite and Offsite Emergency Response Plans

Rio Grande continues to develop a comprehensive Emergency Response Plan with local, state, and federal agencies and emergency response officials and would continue these collaborative efforts during the development, design, and construction of the project. As required by Environmental Condition 53, Rio Grande must file an Emergency Response Plan covering the terminal and ship transit for review and approval by Commission staff prior to construction. Commission staff would also review and approve final design information related to the various layers of protection that would enhance the safety and security of the Rio Grande LNG Terminal and would be in accordance with recommended and generally accepted good engineering practices. These reviews go above the minimum federal requirements required by the Pipeline and Hazardous Materials Safety Administration (PHMSA) and U.S. Coast Guard (USCG) regulations for the LNG facility,[1] and USCG regulations for the LNG marine vessel.[2] In addition, for LNG marine vessels, the 2004 Sandia Report describes the risk and consequences within each Zone of Concern with risk management strategies to mitigate risk to infrastructure and the public.[3] The layers of protection and risk management strategies reduce public incident impacts to less than significant levels, including impacts to those with access and functional needs and environmental justice communities.

The Emergency Response Plan and Cost Sharing Plan requirements are required by Environmental Conditions 53 and 54 as modified in Appendix A of this order. However, in order to mitigate the potential offsite risks from a catastrophic incident from an LNG marine vessel or at the Rio Grande LNG Terminal to people with access and

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[1] 49 C.F.R.§ 193 (PHMSA Regulations); 33 C.F.R. §§ 105, 127 (USCG Regulations).

[2] 33 C.F.R. § 104 (2022); 46 C.F.R. § 154 (2022).

[3] *See* U.S. DOE, Office of Scientific and Technical Information, *2004 Sandia Report*, 1.3.1 and 1.3.2, https://www.osti.gov/servlets/purl/882343/ (last visited Dec. 2022).

functional needs, Rio Grande would need to consider additional identified elements of recommended and generally accepted good engineering practices for emergency response plans and resource requirements, including, but not limited to consistency with the following National Fire Protection Association (NFPA) codes and standards: NFPA 1600,[4] NFPA 1616,[5] NFPA 1620,[6] NFPA 470,[7] and NFPA 475[8] or approved equivalents. Specifically, NFPA 1600 (2019 edition) provides provisions for the planning and design process of an emergency management program and includes the following provisions:

- Section 5.2.2 specifies a risk assessment to be conducted evaluating the likelihood and severity of hazards, including accidental and intentional events that may result in hazardous material releases, explosions, and fires as well as consideration of specific causes and preceding events, such as geological events (e.g., subsidence, earthquakes, tsunamis, volcanic, etc.) and meteorological events (e.g., extreme temperatures, hurricanes, tornadoes, floods, snow and ice storms, and wildland fires, etc.), as discussed in the final EIS.[9]

- Section 5.2.2.2 specifies the vulnerability of people, property, operations, environment, and supply chain operations to be evaluated.

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[4] NFPA, *NFPA 1600: Standard on Continuity, Emergency, and Crisis Management*, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1600 (last visited Jan. 2023).

[5] NFPA, *NFPA 1616: Standard on Mass Evacuation, Sheltering, and Re-Entry Programs*, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1616 (last visited Jan. 2023).

[6] NFPA, *NFPA 1620: Standard for Pre-Incident Planning*, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1620 (last visited Jan. 2023).

[7] NFPA, *NFPA 470: Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders*, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=470 (last visited Jan. 2023).

[8] NFPA, *NFPA 475: Recommended Practice for Organizing, Managing, and Sustaining a Hazardous Materials/Weapons of Mass Destruction Response Program*, https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=475 (last visited Jan. 2023).

[9] Final EIS at 4-339 – 4-351.

- Section 5.2.3 specifies the analysis of the impacts of the hazards identified in section 5.2.2 on the health and safety of persons in the affected area and personnel responding to the incident as well as impacts to properties, facilities, and critical infrastructure.

- Section 5.2.4 specifies an analysis of the escalation of impacts over time.

- Section 5.2.5 specifies evaluation of incidents that could have cascading impacts.

- Section 5.2.6 specifies the risk assessment to evaluate the adequacy of existing prevention and mitigation measures.

Chapter 6 of NFPA 1600 (2019 edition) covers the implementation of the plans, including health and safety of personnel, roles and responsibilities of internal and external entities, lines of authority, process for delegation of authority, liaisons with external entities, and logistics support and resource requirements.

- Section 6.3.1 specifies the implementation of a mitigation strategy that includes measures to limit or control the consequences, extent, or severity of an incident that cannot be prevented based on the results of hazard identification and risk assessment and analysis of impacts.

- Section 6.9.2 specifies that emergency response plans should identify actions to be taken to protect people, including people with disabilities and other access and functional needs.[10]

- Sections 6.6 and 6.9.4 stipulate an emergency response plan include warning, notification, and communication should be determined and be reliable, redundant, and interoperable and tested and used to alert stakeholders potentially at risk from an actual or impending incident.

- Section 6.8 specifies the development of an incident management system to direct, control, and coordinate response, continuity, and recovery operations.

[10] NFPA 1600 defines "access and functional need" as "Persons requiring special accommodations because of health, social, economic, or language challenges."

- Section 6.8.1 stipulates primary and alternate emergency operations centers be established capable of managing response, continuity, and recovery operations and may be physical or virtual.

In addition, NFPA 1600 (2019 edition) Chapter 7 provides specifications for execution of the plan, Chapter 8 provides for training and education provisions, Chapter 9 provides for exercises and tests to be conducted periodically, and Chapter 10 provides for its continued maintenance and improvement.

NFPA 1616 (2020 edition) covers organizing, planning, implementing, and evaluating a program for mass evacuation, sheltering, and re-entry. Similar to NFPA 1600, the following sections of NFPA 1616 stipulate:

- Section 4.5 stipulates similar hazard identification, risk assessment, and requirements analysis as NFPA 1600.

- Section 5.1 stipulates plans to address the health and safety of personnel including persons with disabilities and access and functional needs.[11]

- Section 5.6 specifies a requirements analysis in sub-section 5.6.1 that is based upon the threat, hazard identification, and risk assessment. Sub-section 5.6.2(1) specifies the requirements analysis include characteristics of the potentially affected population, including persons with disabilities and other access and functional needs. In addition, sub-section 5.6.2(2) stipulates consideration of existing mandatory evacuation laws and expected enforcement of those laws. Sub-section 5.6.2(3) stipulates the requirements analysis to include characteristics of the incident that trigger consideration for evacuation based on weather, season, and ambient conditions, speed of onset, magnitude, location and direction, duration, resulting damages to essential functions, risk for cascading effects and secondary disasters, and capability of transportation routes and systems to

[11] NFPA 1616 defines "People with Access and Functional Needs" as "Persons with disabilities and other access and functional needs include those from religious, racial, and ethnically diverse backgrounds; people with limited English proficiency; people with physical, sensory, behavioral and mental health, intellectual, developmental and cognitive disabilities, including individuals who live in the community and individuals who are institutionalized; older adults with and without disabilities; children with and without disabilities and their parents; individuals who are economically or transportation disadvantaged; women who are pregnant; individuals who have acute and chronic medical conditions; and those with pharmacological dependency."

transport life-sustaining materials (e.g., water, medical supplies, etc.) into the affected area.

- Section 5.6.3 stipulates the determination if evacuation or sheltering-in-place is appropriate to the situation and resources available based on 1) the anticipated impact and duration of the event, 2) the distance to appropriate sheltering facilities, 3) the availability of and access to transportation to those facilities, and 4) the ability to communicate with the affected population within the required timeframe.

- Section 5.6.4 stipulates the 1) establishment of a single or unified command, 2) development of information system to notify public and provide an assessment of the time needed to reach people with the information, 3) identification of appropriate sheltering facilities by location, size, types of services available, accessibility, and building safety, and 4) identification of the modes and routes for evacuee transportation and the time needed to reach them, sources of evacuee support services, and manpower requirements based on various potential shelters.

- Section 5.8 also has stipulations for dissemination of information on evacuation, shelter in place, and re-entry before, during, and after an incident to personnel and to the public.

- Section 5.9 has stipulations for warning, notification, and communication needs that are reliable and interoperable and redundant where feasible that takes into account persons with disabilities and other access and functional needs.

Similar to NFPA 1600, NFPA 1616 has requirements in Chapter 6 on Implementation, Chapter 7 on Training and Education, Chapter 8 on Exercises, and Chapter 9 on Program Maintenance and Improvement with additional specifics for mass evacuation, sheltering in place, and re-entry.

NFPA 1620 (2020 edition) specifies the characteristics of the facility and personnel onsite that should be within a pre-incident plan, such as emergency contact information, including those with knowledge of any supervisory, control, and data acquisition systems, communication systems, emergency power supply systems, and facility access controls as well as personnel accountability and assistance for people with self-evacuation limits, means of egress, emergency response capabilities, spill containment systems, water supply and fire protection systems, hazardous material information (e.g., safety datasheets), special considerations for responding to hazardous materials (e.g., firewater may exacerbate LNG fires, boiling-liquid-expanding-vapor

explosion (BLEVE)[12] potential, etc.), and access to emergency action plans developed by the facility. Similar to NFPA 1600 and NFPA 1616, NFPA 1620 section 8.5.2 also addresses the implementation of an incident management system for the duration of the event and Chapter 10 establishes maintenance of a pre-incident plan.

NFPA 1600, NFPA 1616, and NFPA 1620 provisions for threat, hazard identification, and risk assessment provisions and identification of resource requirements and gaps are also consistent with Department of Homeland Security FEMA's Comprehensive Preparedness Guide 101, Developing and Maintaining Emergency Operations Plans, Version 3.0, September 2021, and Comprehensive Preparedness Guide 201, Threat and Hazard Identification and Risk Assessment and Stakeholder Preparedness Review Guide, Third Edition, May 2018, and other FEMA guidance.

NFPA 470 covers the competencies and job performance requirements for emergency response personnel to incidents involving hazardous materials, including awareness level personnel (i.e., personnel onsite that would call for emergency responders and secure the scene), operations level responders (i.e., personnel responding to incident for implementing supporting actions to protection public), hazardous material technicians (i.e., personnel responding to incident for analyzing and implementing planned response), hazardous materials officers, hazardous materials safety officers, emergency medical services (EMS) personnel, incident commanders, and other specialist employees. The standard covers competencies and Job Performance Requirements , including the ability to identify hazardous material releases and hazardous materials in volved and identifying surrounding conditions, such as topography, weather conditions, public exposure potential, possible ignition sources, land use and adjacent land use, overhead and underground wires and pipelines, rail lines, and highways, bodies of water, storm and sewer drains, and building information (e.g., ventilation ducts and air returns). Part of the standard also describes the ability and requirement to estimate potential outcomes in order to properly plan response strategies and tactics, and the selection and

[12] The American Institute of Chemical Engineers Center for Chemical Process Safety defines a boiling-liquid-expanding-vapor-explosion or BLEVE as a "type of rapid phase transition in which a liquid contained above its atmospheric boiling point is rapidly depressurized, causing a nearly instantaneous transition from liquid to vapor with a corresponding energy release. A BLEVE of flammable material is often accompanied by a large aerosol fireball, since an external fire impinging on the vapor space of a pressure vessel is a common cause. However, it is not necessary for the liquid to be flammable to have a BLEVE occur." Center for Chemical Process Safety, *Boiling-Liquid-Expanding-Vapor Explosion (BLEVE)*, https://www.aiche.org/ccps/resources/glossary/process-safety-glossary/boiling-liquid-expanding-vapor-explosion-bleve, (last visited April 2023).

use of proper personnel protective equipment (PPE). Many of these provisions are similar and synergistic with NFPA 1600, NFPA 1616, and NFPA 1620.

NFPA 475 covers the organization, management, and sustainability of a hazardous material response program, including identifying facilities with hazardous materials, analyzing the risk of hazardous material incidents, including identifying hazardous materials at each location, (e.g., quantity, concentration, hazardous properties, etc.), type and design of containers; surrounding population and infrastructure, including vulnerable populations and critical facilities (e.g., schools, hospitals, businesses, etc.). NFPA 475 similarly calls for analyzing the risk of an incident based on the consequences of a release and predicting its behavior and estimating the probability for an incident to take place and potential for cascading incidents. NFPA 475 Chapter 7 also has provisions for resource management, including the identification, acquisition, and management of personnel, equipment, and supplies to support hazardous material response programs. NFPA 475 Chapter 8 expands upon staffing requirements and use of different staffing models and Chapter 9 expands upon training program with reference and similarities to NFPA 470.

In accordance with these recommended and generally accepted good engineering practices, Commission staff evaluated the potential impacts from incidents caused by a range of natural hazards, accidental events, intentional events, and potential for cascading damage at the LNG terminal, including scenarios that would lead to a potential catastrophic failure of a tank required to be accounted in emergency response plans by PHMSA regulations in 49 C.F.R. § 193.2509, and along the LNG carrier route using the Zones of Concern referenced in USCG Navigation and Vessel Inspection Circular (NVIC) 01-11.[13] In addition, Commission staff identified potential emergency response needs based on the potential impacts to and characteristics of the population and infrastructure for potential intentional and accidental incidents along the LNG marine vessel route and at the LNG terminal. Consistent with these practices, Commission staff evaluated the potential hazards from incidents, the potential impacts to areas from incidents and the evaluation of characteristics of population, including those with potential access and functional needs, and infrastructure that require special considerations in pre-incident planning, including but not limited to:

- daycares;
- elementary, middle, and high schools and other educational facilities;

[13] USCG, *NVIC 01-11*, (Jan. 24, 2011), https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2011/NVIC%2001-2011%20Final.pdf.

- elderly centers and nursing homes and other boarding and care facilities;
- detention and correctional facilities;
- stadiums, concert halls, religious facilities, and other areas of assembly;
- densely populated commercial and residential areas, including high rise buildings, apartments, and hotels;
- hospitals and other health care facilities;
- police departments, stations, and substations;
- fire departments and stations;
- military or governmental installations and facilities;
- major transportation infrastructure, including evacuation routes, major highways, airports, rail, and other mass transit facilities as identified in external impacts section; and
- industrial facilities that could exacerbate the initial incident, including power plants, water supply infrastructure, and hazardous facilities with quantities that exceed thresholds in EPA RMP and/or OSHA PSM standards as identified in external impacts section.

Many of these facilities are also identified and defined in NFPA 101, Life Safety Code, and require emergency action plans. NFPA 101 is currently used by every U.S. state and adopted statewide in in 43 of the 50 states.[14] Texas adopted and follows NFPA 101 (2015 edition) without amendments.[15,16] These areas are also similar to "identified sites" defined in 49 C.F.R. § 192 that define high consequence areas and those identified

[14] NFPA, *NFPA 101 Fact Sheet*, (July 27, 2009), https://www.nfpa.org/assets/files/AboutTheCodes/101/NFPA101FactSheet0809.pdf.

[15] Up Codes, *Texas Building Codes*, https://up.codes/codes/texas (last visited Jan. 2023).

[16] Texas Department of Insurance: Texas State Fire Marshal, *Standards of Inspection*, https://www.tdi.texas.gov/fire/fmfsinotices.html (last visited Jan. 2023).

within Pipelines and Informed Planning Alliance (PIPA) for special land use planning considerations near pipelines.[17]

B. Potential Hazards

An incident can result in various potential hazards and are initiated by a potential liquid and/or gaseous release with the formation of vapor at the release location, as well as from any liquid that pooled. The fluid released may present low or high temperature hazards and may result in the formation of toxic or flammable vapors. The type and extent of the hazard will depend on the material released, the storage and process conditions, and the volumes and durations released.

Exposure to either cold liquid or vapor could cause freeze burns and depending on the length of exposure, more serious injury or death. However, spills would be contained to on-site areas and the cold state of these releases would be greatly limited due to the continuous mixing with the warmer air. The cold temperatures from the release would not present a hazard to the public, which would not have access to onsite areas. The cold temperatures may also quickly cool any materials contacted by the liquid on release, causing extreme thermal stress in materials not specifically designed for such conditions. These thermal stresses could subsequently subject the material to brittleness, fracture, or other loss of tensile strength and result in cascading failures. However, regulatory requirements and Environmental Conditions in the Authorization Order would ensure that these effects would be accounted for in the design of equipment and structural supports.

A rapid phase transition (RPT) can occur when a cryogenic liquid is spilled onto water and changes from liquid to gas, virtually instantaneously. Unlike an explosion that releases energy and combustion products from a chemical reaction, an RPT is the result of heat transferred to the liquid inducing a change to the vapor state. RPTs have been observed during LNG test spills onto water. In some test cases, the overpressures generated were strong enough to damage test equipment in the immediate vicinity of the LNG release point. The sizes of the overpressure events have been generally small and are not expected to cause significant damage. Six of the 18 Coyote spills[18] produced RPT

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[17] U.S. DOT: Pipelines and Informed Planning Alliance, *Partnering to Further Enhance Pipeline Safety in Communities through Risk-Informed Land Use Planning, Final Report of Recommended Practices*, (Nov. 2010) https://primis.phmsa.dot.gov/comm/publications/PIPA/PIPA-Report-Final-20101117.pdf#pagemode=bookmarks.

[18] Goldwire, H.C., et al., Coyote Series Data Report LLNL/NWC 1981 LNG Spill Tests Dispersion, Vapor Burn, and Rapid Phase Transition, Volume 1 (1983). In 1981, a series of LNG spill experiments were performed at the Naval Weapons Center, located at China Lake, California; they are commonly referred to as the Coyote series. There was a

explosions. Most were early RPTs that occurred immediately with the spill, and some continued for the longer periods. Including RPTs near the end of the spills on three tests. LNG composition, water temperature, spill rate and depth of penetration all seem to play a role in RPT development and strength. The maximum strength RPT yielded equivalent to up to 6.3 kilograms of TNT free-air point source at the maximum spill rate of 18 m^3/min (4,750 gpm). This would produce an approximate 1 psi overpressures less than 100 feet from the spill source. These events are typically limited to the area within the spill and are not expected to cause damage outside of the area engulfed by the LNG pool. However, a RPT may affect the rate of pool spreading and the rate of vaporization for a spill on water.

C. Vapor Dispersion

Depending on the size and product of the release, liquids may form a liquid pool and vaporize. Additional vaporization would result from exposure to ambient heat sources, such as water or soil. The vapor may form a toxic or flammable cloud depending on the material released. The dispersion of the vapor cloud will depend on the physical properties of the cloud, the ambient conditions, and the surrounding terrain and structures. Generally, a denser-than-air vapor cloud would sink to the ground and would travel with the prevailing wind, while a lighter-than-air vapor cloud would rise and travel with the prevailing wind. The density will depend on the material releases and the temperature of the material. For example, an LNG release would initially form a denser than-air vapor cloud and transition to lighter-than-air vapor cloud as the vapor disperses downwind and mixes with the warm surrounding air. However, experimental observations and vapor dispersion modeling indicate an LNG vapor cloud would not typically be warm, or buoyant, enough to lift off from the ground before the LNG vapor cloud disperses below its lower flammable limit (LFL).

A vapor cloud formed following an accidental release would continue to be hazardous until it dispersed below toxic levels and/or flammable limits. Toxicity is primarily dependent on the airborne concentration of the toxic component and the exposure duration, while flammability of the vapor cloud is primarily dependent just on the concentration of the vapor when mixed with the surrounding air. In general, higher concentrations within the vapor cloud would exist near the spill, and lower concentrations would exist near the edge of the cloud as it disperses downwind.

Toxicity is defined by several different agencies for different purposes. Acute Exposure Guideline Level (AEGL) and Emergency Response Planning Guidelines (ERPG) can be used for emergency planning, prevention, and response activities related

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total of ten Coyote series experiments, which included the study of vapor dispersion and burning vapor clouds and rapid-phase transition explosions. *Id.*

to the accidental release of hazardous substances. Other federal agencies, such as the U.S. Department of Energy (DOE), EPA, and National Oceanic and Atmospheric Administration (NOAA), use AEGLs and ERPGs as the primary measure of toxicity.

There are three AEGLs and three ERPGs, which are distinguished by varying degrees of severity of toxic effects with AEGL-1 and ERPG-1 (level 1) being the least severe to AEGL-3 and ERPG-3 (level 3) being the most severe.

- AEGL-1 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic non sensory effects. However, these effects are not disabling and are transient and reversible upon cessation of the exposure.

- AEGL-2 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long lasting adverse health effects or an impaired ability to escape.

- AEGL-3 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

The EPA directs the development of AEGLs in a collaborative effort consisting of committee members from public and private sectors across the world. Commission staff uses AEGLs preferentially as they are more inclusive and provide toxicity levels at various exposure times (10 minutes, 30 minutes, 1 hour, 4 hours, and 8 hours). The use of AEGLs is also preferred by the DOE and NOAA. Under the EPA RMP regulations in 40 C.F.R. § 68, the EPA currently requires the determination of distances to toxic concentrations based on ERPG-2 levels. ERPG levels have similar definitions but are based on the maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing similar effects defined in each of the AEGLs. The EPA provides ERPGs (1 hour) for a list of chemicals. These toxic concentration endpoints are comparable to AEGLs endpoints.

In addition, any non-toxic release that does not contain oxygen would be classified as simple asphyxiants and may pose extreme health hazards, including death, if inhaled in significant quantities within a limited time. Very cold methane and heavier hydrocarbons vapors may also cause freeze burns. However, the locations of concentrations where cold temperatures and oxygen-deprivation effects could occur are greatly limited due to the continuous mixing with the warmer air surrounding the spill site. For that reason,

exposure injuries from contact with releases of methane, nitrogen, and heavier hydrocarbons normally represent negligible risks to the public.

Flammable vapors can develop when a flammable material is above its flash point and concentrations are between the LFL and the upper flammable limit (UFL). Concentrations between the LFL and UFL can be ignited, and concentrations above the UFL or below the LFL would not ignite.

The extent of the affected area and the severity of the impacts on objects within a vapor cloud would primarily be dependent on the material, quantity, and duration of the initial release, the surrounding terrain, and the weather (e.g., wind speed and direction, temperature, humidity, etc.) present during the dispersion of the cloud.

D. Flammable Vapor Ignition

If the flammable portion of a vapor cloud encounters an ignition source, a flame would propagate through the flammable portions of the cloud. In most circumstances, the flame would be driven by the heat it generates. This process is known as a deflagration, or a flash fire, because of its relatively short duration. However, exposure to a deflagration, or flash fire, can cause severe burns and death, and can ignite combustible materials within the cloud. If the deflagration in a flammable vapor cloud accelerates to a sufficiently high rate of speed, pressure waves that can cause damage would be generated. As a deflagration accelerates to super-sonic speeds, the large shock waves produced, rather than the heat, would begin to drive the flame, resulting in a detonation. The flame speeds are primarily dependent on the reactivity of the fuel, the ignition strength and location, the degree of congestion and confinement of the area occupied by the vapor cloud, and the flame travel distance. Once a vapor cloud is ignited, the flame front may propagate back to the spill site if the vapor concentration along this path is sufficiently high to support the combustion process. When the flame reaches vapor concentrations above the UFL, the deflagration will transition to a pool or jet fire back at the source. If ignition occurs soon after the release begins, a fireball may occur near the source of the release and would be of a relatively short duration compared to an ensuing jet or pool fire. The extent of the affected area and the severity of the impacts on objects in the vicinity of a fire would primarily be dependent on the material, quantity, and duration of the fire, the surrounding terrain, and the ambient conditions present during the fire.

E. Overpressures

If the deflagration in a flammable vapor cloud accelerates to a sufficiently high rate of speed, pressure waves that can cause damage would be generated. As a deflagration accelerates to super-sonic speeds, large pressure waves are produced, and a shock wave is created. In this scenario, the shock wave, rather than the heat, would drive

the flame, resulting in a detonation. Deflagrations or detonations are generally characterized as "explosions" as the rapid movement of the flame and pressure waves associated with them cause additional damage beyond that from the heat. The amount of damage an explosion causes is dependent on the amount the produced pressure wave is above atmospheric pressure (i.e., an overpressure) and its duration (i.e., pulse). For example, a 1 psi overpressure, often cited as a safety limit in NFPA 59A (2019 edition) and U.S. regulations, is associated with glass shattering and traveling with velocities high enough to lacerate skin.

Flame speeds and overpressures are primarily dependent on the reactivity of the fuel, the ignition strength and location, the degree of congestion and confinement of the area occupied by the vapor cloud, and the flame travel distance.

The potential for unconfined LNG vapor cloud detonations was investigated by the USCG in the late 1970s at the Naval Weapons Center in China Lake, California. Using methane, the primary component of natural gas, several experiments were conducted to determine whether unconfined LNG vapor clouds would detonate. Unconfined methane vapor clouds ignited with low-energy ignition sources (13.5 joules), produced flame speeds ranging from 12 to 20 mph. These flame speeds are much lower than the flame speeds associated with a deflagration with damaging overpressures or a detonation.

To examine the potential for detonation of an unconfined natural gas cloud containing heavier hydrocarbons that are more reactive, such as ethane and propane, the USCG conducted further tests on ambient-temperature fuel mixtures of methane-ethane and methane-propane. The tests indicated that the addition of heavier hydrocarbons influenced the tendency of an unconfined natural gas vapor cloud to detonate. Less processed natural gas with greater amounts of heavier hydrocarbons would be more sensitive to detonation.

Although it has been possible to produce damaging overpressures and detonations of unconfined LNG vapor clouds, the feed gas stream proposed for the project would have lower ethane and propane concentrations than those that resulted in damaging overpressures and detonations. The substantial amount of initiating explosives needed to create the shock initiation during the limited range of vapor-air concentrations also renders the possibility of detonation of these vapors at an LNG plant as unrealistic. Ignition of a confined LNG vapor cloud could result in higher overpressures. To prevent such an occurrence, Rio Grande would take measures to mitigate the vapor dispersion and ignition into confined areas, such as buildings. Rio Grande would install hazard detection devices at all combustion and ventilation air intake equipment to enable isolation and deactivation of any combustion equipment whose continued operation could add to, or sustain, an emergency. In general, the primary hazards to the public from an

LNG spill that disperses to an unconfined area, either on land or water, would be from dispersion of the flammable vapors or from radiant heat generated by a pool fire.

In comparison with LNG vapor clouds, there is a higher potential for unconfined propane clouds to produce damaging overpressures. This has been shown by multiple experiments conducted by the Explosion Research Cooperative to develop predictive blast wave models for low, medium, and high reactivity fuels and varying degrees of congestion and confinement. The experiments used methane, propane, and ethylene, as the respective low, medium, and high reactivity fuels. In addition, the tests showed that if methane, propane, or ethylene are ignited within a confined space, such as in a building, they all have the potential to produce damaging overpressures.

Fires and overpressures may also cause failures of nearby storage vessels, piping, and equipment if not properly mitigated. These failures are often termed cascading events or domino effects and can exceed the consequences of the initial hazard. The failure of a pressurized vessel could cause fragments of material to fly through the air at high velocities, posing damage to surrounding structures and a hazard for operating staff, emergency personnel, or other individuals in proximity to the event. In addition, failure of a pressurized vessel when the liquid is at a temperature significantly above its normal boiling point could result in a BLEVE. BLEVEs can produce overpressures when the superheated liquid rapidly changes from a liquid to a vapor upon the release from the vessel. BLEVEs of flammable fluids may also ignite upon its release and cause a subsequent fireball.

F. Potential Infrastructure Impacts from LNG Facilities

The final EIS for the Rio Grande LNG Terminal assessed potential impacts to the public and whether the project would operate safely, reliably, and securely.[19] The Rio Grande LNG Terminal would be subject to design requirements and would include mitigation to meet regulation requirements and the conditions of the Authorization Order.[20] Although the likelihood of incidents and hazards described in the final EIS are extremely low due to the mitigation required by regulations and Environmental Conditions, potential impacts from these hazards could impact onsite personnel and offsite public.[21]

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[19] *See* Final EIS at 4-304 – 4-380.

[20] *See* Authorization Order, 169 FERC ¶ 61,131 at app.

[21] Specific distances of potential impacts from incidents at an LNG terminal have not been provided at this time to try and balance the potential security interests in releasing such information. Specific distances for various hazards described would be

Commission staff evaluated a range of releases to evaluate the potential impacts to populations and infrastructure within vicinity of the plant. Impacts would vary based on the initiating event and subsequent release characteristics (e.g., size, location, direction, process conditions, etc.), hazard (i.e., vapor dispersion, overpressures, fires, BLEVE and pressure vessel bursts), weather conditions, and surrounding terrain. Distances to radiant heats of 5 kW/m^2 (or approximately 1,600 BTU/ft^2-hr) from fires produced by accidental and intentional acts could impact onsite personnel or offsite public. For example, section 2.2.2.2 in NFPA 59A-2001, incorporated by reference in PHMSA regulations in 49 C.F.R. § 193, requires spill containments, serving vaporization, process, or LNG transfer area, to contain liquid releases from 2-inch diameter holes and guillotine releases of piping less than 6-inches in diameter. Additionally, PHMSA siting regulations for flammable vapor dispersion and thermal radiation exclusion zones limit the dispersion of flammable vapors and 1,600 BTU/ft^2-hr radiant heat from LNG pool fires in those spill containment systems in certain weather conditions from extending beyond the control of the operator or government agency and prevent it from extending onto areas accessible by the public. The Authorization Order requires spill containment systems to capture all liquid from guillotine ruptures of the single largest line and largest vessel(s) to limit their pool spread and vaporization. This effectively limits the extent of the 1,600 BTU/ft^2-hr radiant heat from pool fires to onsite for even the largest releases from a single source and considerably reduces the dispersion distances to flammable vapors. However, ignition of releases larger than those used in the siting analyses can result in 1,600 BTU/ft^2-hr and 10,000 BTU/ft^2-hr radiant heats from jet and pool fires that extend offsite onto publicly accessible areas.

The only offsite infrastructure that could be impacted by 10,000 BTU/ft^2-hr radiant heat from a fire would be a portion of Texas State Highway 48 with no impacts to nearby communities. The offsite infrastructure that could be impacted by 1,600 BTU/ft^2-hr radiant heat from a fire would be the authorized Texas LNG Terminal facility[22] and the infrastructure within the 10,000 BTU/ft^2-hr radiant heat with no impact to nearby communities. The unignited vapor dispersion from a catastrophic failure of an LNG storage tanks is extremely unlikely but, if it occurred, could extend farther offsite and could impact the following critical infrastructure: commercial areas including the Port Isabel-San Benito Navigation District, and the Space X assembly facility, numerous local government buildings including the Port Isabel Police Department, Cameron County

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provided in emergency response plans for reference and use by emergency responders, Further, potential hazards have been described and potential impacts to communities are disclosed to balance the importance of public disclosure and transparency on the balance of potentially releasing information that has not been previously released and could be used by intentional actors.

[22] *Tex. LNG Brownsville LLC*, 169 FERC ¶ 61,130 (2019).

Precinct 1 Constable's Office, Port Isabel City Fire Department, Cameron County Tax Assessor-Collector Office, Port Isabel City Hall, and Port Isabel City Social Worker Office; two health care facilities including the Port Isabel Health Clinic, and the Luna Medical Clinic, and several major roadways, including the Queen Isabel Causeway, Texas State Highway 100, and Texas State Highway 48. Several communities within the extent of the unignited vapor release from a catastrophic failure of one of the LNG storage tanks could include multiple residential homes, apartment complexes, several schools including Garriga Elementary School, Derry Elementary School, Port Isabel Junior High School, Port Isabel High School, several child-care facilities including the Little Learners Academy, Esperanza B. Garza Head Start, and Beacon Bay Head Start, hotels, and places of worship.

G. Potential Infrastructure Impacts Along LNG Marine Vessel Route

As LNG marine vessels proceed along the intended transit route, the estimated impacts would extend onto populated areas and infrastructure. These distances are provided as Zones of Concern in the publicly available guidance document Navigation and Vessel Inspection Circular (NVIC) 01-11[23] used by the USCG and correspond to 37.5 kW/m^2 (approximately 12,000 BTU/ft^2-hr) radiant heats from fires for Zone 1, 5 kW/m^2 (approximately 1,600 BTU/ft^2-hr) radiant heats from fires for Zone 2, and flammable vapor dispersion distances for Zone 3. The areas, including a description of the infrastructure and communities, impacted by the three different hazard zones were provided for accidental and intentional events in the final EIS.[24]

H. Potential Impacts on People with Access and Functional Needs and Environmental Justice Communities

Commission staff used EJScreen[25] as an initial screening tool to identify the potential impacts from incidents along the LNG marine vessel transit route and at the LNG terminal, including potential impacts to people with access and functional needs as defined in NFPA 1600 and 1616. Table C.1 shows the resultant percentages of people

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[23] USCG, *NVIC 01-11*, (Jan. 24, 2011), https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2011/NVIC%2001-2011%20Final.pdf.

[24] Final EIS, 4-317 at Fig. 4.12.1.3-1; 4.12.1.3-2.

[25] EPA, *EJScreen (Version 2.1)*, https://ejscreen.epa.gov/mapper/ (last visited Dec. 2022).

with potential access and functional needs based on 2016-2020 U.S. Census Bureau, American Community Survey (ACS), as follows.[26]

[26] Based on EPA, EJScreen User Guide Version 2.1, 2022, the impact area would aggregate appropriate portions of the intersecting block groups, weighted by population, to create a representative set of data for the entire ring area, honoring variation and dispersion of the population in the block groups within it. For each indicator, the result is a population-weighted average, which equals the block group indicator values averaged over all residents who are estimated to be inside the impact area. A weight factor for each block group is determined by summing each block point population percentage for that block group. If the impact area touches part of a neighboring block group that contains no block points, nothing will be aggregated; if an impact area intersects a number of block groups, EJScreen indices will be aggregated within each block group based on the affiliated block points. The aggregation is done by using factor-weighted block points.

TABLE C.1

People With Access and Functional Needs within Potential Impact Areas

Potential Incident Impact Area	Population Density (per square mile) [1]	Households[1]	Housing Units[1]	Age 0-4 (percent)[1]	Age 65+ (percent) [1]	Linguistically Isolated Households (percent)[1, 2, 3]
Zone 1 (LNG marine vessel - Accidental)	0	0	0	0%	0%	0%
Zone 2 (LNG marine vessel - Accidental)	319	75	397	2%	34%	0%
Zone 3 (LNG marine vessel - Accidental)	168	237	1,255	2%	34%	0%
Zone 1 (LNG marine vessel - Intentional)	0	0	0	0%	0%	0%
Zone 2 (LNG marine vessel - Intentional)	183	195	1,033	2%	34%	0%
Zone 3 (LNG marine vessel - Intentional)	194	1,558	4,095	5%	22%	14.9%
10,000 BTU/ft^2-hr (LNG Terminal)	0	0	0	0%	0%	0%
1,600 BTU/ft^2-hr (LNG Terminal)	0	0	0	0%	0%	0%
Flammable Vapor Cloud (LNG Terminal)	186	2,995	5,470	9%	19%	13.6%

[1] American Community Survey, 2016-2020, ACS Estimates
[2] Households in which no one 14 and over speaks English "very well" or speaks English only.
[3] Calculated by dividing the number of linguistically isolated households by the total number of households multiplied by 100.

The worst-case distances from these potential incidents would potentially impact six census block groups, all of which are considered environmental justice communities. The block groups located with environmental justice communities that exceed the thresholds for minority and low income would include Census Tracts 142.02 Block Group 2, 127 Block Group 2, 123.04 Block Group 2, 123.04 Block Group 4 (based on the minority and low-income thresholds); Census Tract 123.04 Block Group 3 (based on the minority threshold); and Census Tract 123.04 Block Group 1 (based on low-income threshold).

I. Emergency Response Plans and Mitigation

In order to mitigate these potential offsite risks, this order modifies, in Appendix A, the Emergency Response Plan and Cost Sharing Plan Environmental

Conditions 53 and 54 from the Authorization Order. The modified language specifies emergency response and cost sharing considerations related to public education materials, including those with access and functional needs and environmental justice communities, on proposed evacuation routes and shelter in place locations, first responder training, emergency command centers and equipment, and public communication methods and devices. These revisions are made by Commission staff to further enhance the safety and security measures beyond that which would normally be required at the LNG terminal by the minimum standards for LNG safety promulgated in PHMSA regulations under 49 C.F.R. § 193 and USCG regulations under 33 C.F.R. §§ 105 and 127.

As stated in Sandia National Laboratories Report, Guidance on Risk Analysis and Safety Implications of a Large LNG Spill Over Water, SAND2004-6258, which was the basis for the Zones of Concern and referenced in NVIC 01-011, Zone 1 represents "risks and consequences of an LNG spill could be significant and have severe negative impacts" and radiant heat demarked by this zone "poses a severe public safety and property hazard, and can damage or significantly disrupt critical infrastructure." Subsequently, the Sandia report concludes that for accidental Zone 1 impacts, "risk management strategies for LNG operations should address both vapor dispersion and fire hazards" and the most rigorous deterrent measures, such as vessel security zones, waterway traffic management, and establishment of positive control over vessels are options to be considered as elements of the risk management process." Zone 1 is based upon a 37.5 kW/m^2 radiant heat from a fire, which would cause significant damage to equipment and structures that are located within 1,640 feet.[27] Sandia recommends that "incident management and emergency response measures should be carefully evaluated to ensure adequate resources (i.e., firefighting, salvage, etc.) are available for consequence and risk mitigation."

Sandia indicates Zone 2 represents where radiant heat "transitions to less severe hazard levels to public safety and property" and the consequence of an accidental LNG spill are reduced and risk reduction and mitigation approaches and strategies can be less extensive." Zone 2 is based upon a 5 kW/m^2 radiant heat, which would cause significant impacts to individuals, but would not be expected to significantly impact most structures.[28] Sandia concludes that for accidental Zone 2 impacts, "risk management strategies for LNG operations should focus on approaches dealing with both vapor dispersion and fire hazards" and "should include incident management and emergency management and emergency response measures, such as ensuring areas of refuge (e.g., enclosed areas, buildings) are available, development of community warning signals, and community education programs to ensure persons know what precautions to take."

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[27] *See* Final EIS at 4-315 (specific description of Sandia Zone 1 impacts).

[28] *See id.* (specific description of Sandia Zone 2 impacts).

Sandia indicates Zone 3 represents "risks and consequences to people and property of an accidental LNG spill over water are minimal" and radiant heat "poses minimal risks to public safety and property." Zone 3 is based upon the dispersion distance to flammable vapors under worst-case wind conditions.[29] In the rare circumstance that the flammable vapors are not ignited until later, there could be flash fires or explosions depending on congestion, confinement, and ignition strength and location. Subsequent pool fires that would be demarked from the Zone 1 and 2 fire hazard distances, Sandia concludes that for accidental Zone 3 impacts, "risk reduction and mitigation strategies can be significantly less complicated or extensive" and "should concentrate on incident management and emergency response measures that are focused on dealing with vapor cloud dispersion...," such as ensuring "areas of refuge are available, and community education programs...to ensure that persons know what to do in the unlikely event of a vapor cloud." Sandia makes similar recommendations for the Zones of Concern for intentional acts. The modified Emergency Response Plan and Cost Sharing Plan Environmental Condition Nos. 53 and 54 in Appendix A of this order incorporate the considerations from the Sandia recommendations and would be consistent with the recognized and generally accepted good engineering practices for evacuating and sheltering in place, such as NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470, and NFPA 475.

As described in the final EIS, Commission staff evaluated Rio Grande's application with a focus on potential hazards from within the terminal and near the site, including external events, which may have the potential to cause damage or failure to the project facilities. Based on these potential hazards, staff examined the project's engineering design features that would mitigate potential hazards and any risk to safety and reliability.[30] When reviewing an applicant's engineering design for a project, the Commission requires it to be site-specific and developed to the extent that further detailed design would not result in significant changes to the siting considerations, basis of design, operating conditions, major equipment selections, equipment design conditions, or safety system designs. The engineering design that staff evaluated included: process design; mechanical design; hazard mitigation design for the spill containment design; spacing and plant layout design; ignition control design; hazard detection; emergency shutdown and depressurization system design; hazard control design; passive cryogenic and fire protection design; firewater system design; geotechnical and structural design, including natural hazards design; and onsite and offsite emergency response plans.[31]

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[29] *See id.* (specific description of Sandia Zone 3 impacts).

[30] *Id.* at 4-322 to 4-323.

[31] *Id.* at 4-323 to 4-341 (detailing staff's evaluation of the project's engineering

To analyze the reliability and safety of these designs, staff considered the occurrence and likelihood of potential hazards and the likely severity of consequences based on past incidents and validated hazard modeling. As part of its review, staff recommended 93 mitigation measures in the final EIS, which were adopted as conditions in the Authorization Order.[32] In addition to the earlier review, staff reevaluated the potential impacts along the LNG marine vessel transit route and at the LNG terminal as described above.[33] This review resulted in modifications to Environmental Conditions 53 and 54 from the Authorization Order related to emergency response and cost sharing plans in order to further mitigate potential offsite risks.[34] Based on these reviews, Commission staff determined that the risk (i.e., likelihood and consequence) of accidental and intentional events would be less than significant with implementation of the previously adopted safety and security conditions of the Authorization Order and the proposed ERP and Cost Sharing Plan recommendations herein. These measures further enhance the safety and security measures above what is required at the LNG terminal by PHMSA regulations under 49 C.F.R. § 193 and USCG regulations under 33 C.F.R. §§ 105 and 127, and those required for the LNG marine vessel by USCG regulations under 33 C.F.R. § 104 and 46 C.F.R. § 154.

The Energy Policy Act of 2005 requires LNG terminal operator's Emergency Response Plan be developed in consultation with the USCG and State and local agencies and be approved by the Commission prior to final approval to begin construction. Rio Grande has already filed initial drafts of Emergency Response Plans prior to initial site preparation and has committed to providing public education materials in English and Spanish. However, the Emergency Response Plans continue to be under development. Appendix A of this order modifies Environmental Conditions 53 and 54 from the Authorization Order, providing , that prior to construction of final design, Rio Grande shall file with the Secretary, for review and written approval by the Director of the Office of Energy Projects, or their designee, an updated Emergency Response Plan (ERP), including evacuation and any sheltering and re-entry. The ERP must be developed and coordinated with the USCG; state, county, and local emergency planning groups; fire departments; state and local law enforcement; and other appropriate federal agencies. This plan must be consistent with recommended and good engineering practices, as defined in NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470, NFPA 475, or approved equivalents, and based on potential impacts and onsets of hazards from accidental and

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design).

[32] Authorization Order, 169 FERC ¶ 61,131 at Env't Conditions 49-139.

[33] *See supra* at C-19 & C-20.

[34] *See supra* Order on Remand and Amending Certificate at P 156.

intentional events along the LNG marine vessel route and potential impacts and onset of hazards from accidental and intentional events at the LNG terminal, including but not limited to a catastrophic failure of the largest LNG tank. The plan must also address any special considerations and pre-incident planning for infrastructure and public with access and functional needs and include at a minimum:

a. materials and plans for periodic dissemination of public education and training materials in English and Spanish for potential hazards and impacts, identification of potential hazards, and steps for public notification, evacuation, and shelter in place within any transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;

b. plans to competently train emergency responders required to effectively and safely respond to hazardous material incidents including, but not limited to, LNG fires and dispersion;

c. plans to competently train emergency responders to effectively and safely evacuate or shelter public within transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;

d. designated contacts with federal, state, and local emergency response agencies responsible for emergency management and response within any transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;

e. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;

f. scalable procedures for mobilizing response and establishing a unified command, including identification, location, and design of any emergency operations centers and emergency response equipment required to effectively and safely respond to hazardous material incidents and evacuate or shelter public within transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;

g. scalable procedures for notifying public, including identification, location, design, and use of any permanent sirens or other warning devices required to effectively communicate and warn the public prior to onset of debilitating hazards within any transient hazard areas along the LNG marine vessel route and within hazard areas from LNG terminal;

h. scalable procedures for evacuating the public, including identification, location, design, and use of evacuation routes/methods and any mustering

locations required to effectively and safely evacuate the public within any transient hazard areas along the LNG marine transit route and within hazard areas from LNG terminal; and

i. scalable procedures for sheltering the public, including identification, location, design, and use of any shelters demonstrated to be needed and demonstrated to effectively and safely shelter the public prior to onset of debilitating hazards within transient hazard areas that may better benefit from sheltering in place (i.e., those within Zones of Concern 1 and 2), along the route of the LNG marine vessel and within hazard areas that may benefit from sheltering in place (i.e., those within areas of 1,600 BTU/ft^2-hr and 10,000 BTU/ft^2-hr radiant heats from fires with farthest impacts, including from a catastrophic failure of largest LNG tank) of the LNG terminal.

Modified Environmental Condition No. 53 requires Rio Grande to notify Commission staff of all planning meetings in advance and to report progress on the development of its Emergency Response Plan at 3-month intervals.

The Energy Policy Act of 2005 requires LNG terminal operators develop a cost-sharing plan to reimburse direct costs to state and local agencies. To satisfy this requirement, Commission staff also includes revised Environmental Condition No. 54 for Rio Grande to provide a Cost Sharing Plan that includes sustained funding of any requirement or resource gap analysis identified above to be needed and to effectively and safely evacuate and shelter public and required to effectively and safely respond to hazardous material incidents. Once submitted by Rio Grande, Commission staff would evaluate the revised Emergency Response Plan and Cost Sharing Plan in accordance with recommended and good engineering practices such as, but not limited to, NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470 and NFPA 475, or approved equivalents.

Based on our preliminary analysis of the hazards from the LNG facilities and along the LNG marine vessel route and the Environmental Conditions set forth in the Authorization Order and modified Environmental Conditions herein, Rio Grande must provide additional information, for review and approval, on development of emergency response plans prior to construction of final design. Rio Grande will also have to file three dimensional drawings, for review and approval, under the current conditions in its Authorization Order that demonstrate there is a sufficient number of access and egress locations at the LNG terminal. Rio Grande is also required under current conditions in its Authorization Order to coordinate with local, state, and federal agencies on the development of an emergency response plan and cost sharing plan. Rio Grande has provided and must continue to provide periodic updates on the development of these plans for review and approval, and ensure they are in place prior to introduction of hazardous fluids. In addition, the project facilities would be subject to regular

inspections throughout the life of the facility and would continue to require companies to file updates to the Emergency Response Plan.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Rio Grande LNG, LLC	Docket Nos. CP16-454-003
	CP16-454-000
Rio Bravo Pipeline Company, LLC	CP16-455-000
	CP16-455-002
	CP20-481-000

(Issued April 21, 2023)

PHILLIPS, Chairman, *concurring*:

1. I concur in today's orders.[1] In *Vecinos para el Bienestar de la Comunidad Costera v. FERC*,[2] the U.S. Court of Appeals for the District of Columbia Circuit held that "the Commission's analyses of the [Rio Bravo and Texas LNG projects'] impacts on climate change and environmental justice communities were deficient," and directed the Commission on remand to "revisit its determinations of public interest and convenience under Sections 3 and 7 of the NGA" after adequately considering those issues. With today's order, we have provided a full response to both deficiencies identified by the Court.

2. First, with respect to climate change, the Court held that the Commission did not adequately respond to arguments regarding why it should deploy the Social Cost of Carbon.[3] In response, consistent with recent precedent, we have included the Social Cost of Carbon figures in today's order.

3. Second, with respect to environmental justice, the Court held that the Commission did not adequately explain its method for identifying environmental justice communities potentially affected by the projects. In response, we have conducted a full review of the

[1] I enter the same concurrence in this case as *Texas LNG Brownsville LLC*, 183 FERC ¶ 61,047 (2023).

[2] 6 F.4th 1321, 1331 (D.C. Cir. 2021).

[3] *Id.* at 1328-30.

projects' impacts on environmental justice communities. Throughout 2022, Commission staff issued multiple data requests to gather information on the projects' potential impacts on environmental communities with 50 kilometers of the facilities. In addition, we provided all stakeholders an opportunity to comment on the information submitted in those data requests, including what that information meant for environmental justice communities. While I recognize that certain of my colleagues would have preferred more process or less, I believe that the record assembled throughout the last year is an appropriate middle ground that represents an adequate basis to fully consider the issues the Court remanded to us in *Vecinos* nearly two years ago.

4. And we did just that. Today's order conducts a full environmental justice examination using our current methods, which are consistent with EPA and CEQ guidance. As part of that investigation, and in direct response to the Court, we identified all environmental justice communities within 50 kilometers of the projects, as opposed to just those within the 2-mile radius considered in the initial orders.[4] We then analyzed each project's impacts on affected EJ communities. As part of that full examination and due to required mitigation, we affirmed our earlier conclusion that the projects' impacts would be less than significant.

5. To that point, today's order takes an unprecedented and bipartisan step to protect environmental justice communities from potential concerns about the projects' effects on air quality. Because portions of the projects will enter service before construction is entirely completed, there is the potential that those overlapping activities could, in connection with other background emissions, contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS) for certain pollutants. To mitigate that concern, the Commission is, for the first time, *sua sponte*, requiring the projects' sponsors to file a plan to ensure that the overlapping construction and operation of project do not cause any exceedance of the NAAQS. That measure allows the Commission to conclude that the projects will not have any significant air quality impacts on environmental justice communities.

6. In addition, at a broader level, this mitigation illustrates how the Commission is making progress on the critically important issue of cumulative impacts. At the Commission's March 29, 2022 Roundtable on Environmental Justice and Equity in Infrastructure Permitting, we heard from several stakeholders, including community groups, about the importance of considering cumulative impacts—i.e., not just the air emissions directly caused by a particular project, but also those emissions in conjunction with the emissions from other sources within the region. Today's order takes a critical step toward addressing that concern by requiring that the project sponsors develop a plan

[4] The underlying orders identified only communities within in two miles or over three kilometers of the facility.

to ensure that incremental emissions impacts associated with these projects, on top of all sources, do not cause a NAAQS exceedance, thereby helping to protect communities, including environmental justice communities, that may venture near the projects.

For these reasons, I respectfully concur.

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Willie L. Phillips
Chairman

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Rio Grande LNG, LLC	Docket Nos. CP16-454-003
	CP16-454-000
Rio Bravo Pipeline Company, LLC	CP16-455-000
	CP16-455-002
	CP20-481-000

(Issued April 21, 2023)

CLEMENTS, Commissioner, *dissenting*:

1. I dissent from the Order[1] because (1) the Commission was required to prepare a supplemental environmental impact statement (EIS) and its failure to do so renders the Order's significance determinations unsupportable; (2) the Commission should have granted the requests it received to hold public meetings addressing the Commission's new analyses of environmental and other impacts;[2] and (3) I disagree with the Order's explanation for why the Commission is not determining the significance of greenhouse gas (GHG) emissions associated with the Rio Grande LNG Terminal and Rio Bravo Pipeline projects.[3] The Commission's failure to prepare a supplemental EIS for the two projects and the proposed amendment to the Rio Bravo Pipeline certificate, and to take public comment on the supplement, leaves the Commission with a fundamentally flawed record that cannot support a public interest determination for either project. I therefore dissent from the Order's ultimate conclusions that the Rio Bravo Pipeline, as amended,[4] is in the public convenience and necessity and that the Rio Grande LNG Terminal is not inconsistent with the public interest.[5]

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[1] *Rio Grande LNG, LLC*, 183 FERC ¶ 61,046 (2023) (Order).

[2] *See* Order at PP 83, 85.

[3] *See* Order at PP 92-93, 101.

[4] Given my conclusion that the Rio Bravo Pipeline project as a whole cannot be found to be in the public convenience and necessity, by extension the proposed changes to the project cannot be found to be in the public convenience and necessity. The Commission should have prepared a supplemental EIS addressing the Rio Bravo Pipeline and the proposed revisions to the project together.

[5] Order at P 207.

2. In performing the expanded review of EJ impacts required by the D.C. Circuit's remand decision in *Vecinos*,[6] the Commission identified 282 additional EJ communities in the area around the Rio Grande LNG Terminal that could be impacted by the project, beyond the four identified in the Commission's original analysis. It also identified 85 additional EJ communities in the area around the Rio Bravo Pipeline project, beyond the 21 identified in the Commission's original analysis. The Commission has not provided members of these *367 newly identified* EJ communities any meaningful opportunity to comment on the impacts the projects may have on them or what mitigation measures would help prevent or minimize any adverse impacts. For the reasons explained below, the Commission should have issued the new environmental and safety analyses included in the body and appendices of the Order as a supplemental EIS, issued targeted notices of the supplemental EIS to potentially affected EJ communities, and allowed a reasonable period for public comment on the supplemental EIS, including oral comments at the town hall style meetings that commenters have requested. The Commission's failure to do so leaves us with an incomplete administrative record with respect to potential adverse impacts on newly identified EJ communities, the significance of those impacts, and mitigation measures to address them. In short, we lack the foundation for reasoned decision-making on these vital issues.

3. The National Environmental Policy Act (NEPA) requires agencies to prepare an EIS for "major Federal actions significantly affecting the quality of the human environment."[7] The Commission did so before approving the Rio Grande LNG Terminal and Rio Bravo Pipeline projects. However, that was not enough to meet our obligations under NEPA. According to the Council on Environmental Quality's (CEQ) regulations implementing NEPA, an agency must prepare a *supplemental* EIS if "there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[8] Since issuing the original EIS for the Rio Grande

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[6] *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321 (D.C. Cir. 2021). The Court instructed that, on remand, the Commission must explain why it used only a two-mile radius for its analysis of EJ impacts or use a different radius. *Id.* at 1331. The Commission correctly chose to use the 50-kilometer radius in its analysis on remand because that was the only rational choice given that the Commission uses that radius for analysis of air quality impacts. *See* Order at P 118 & n.292. (explaining 50 kilometers is the distance that the U.S. Environmental Protection Agency uses for cumulative air modeling for major stationary sources under its Prevention of Significant Deterioration Program).

[7] 42 U.S.C. § 4332(2)(C).

[8] 40 C.F.R. § 1502.9(d)(1)(ii). The Commission's regulations implementing NEPA provide that the Commission will comply with CEQ's regulations. *See* 18 C.F.R.

Terminal and Rio Bravo Pipeline projects, and following the remand in *Vecinos,* the Commission has identified hundreds of additional potentially affected EJ communities. Under any reasonable interpretation of CEQ's regulation, this is significant new information "relevant to environmental concerns." For that reason alone, the Commission should have issued its new analyses as a supplemental EIS and provided an opportunity for public comment on it.[9]

4. The other reasons a supplemental EIS is required are equally plain. In the Order, the Commission finds that, even with Rio Grande's proposed mitigation measures, during periods when construction, operation, and commissioning activities occur at the same time at the LNG terminal, the Clean Air Act National Air Ambient Quality Standards (NAAQS) may be exceeded for certain air pollutants.[10] The Order imposes a new air pollution and monitoring condition that may prevent or reduce NAAQS violations.[11] Although I agree that imposing this condition is a beneficial step to take, I cannot conclude that it will be sufficient to reduce cumulative air emissions to an insignificant level because the condition itself is vague[12] and we have had no public comment on whether it will be effective or what additional mitigation may be needed. The Order also finds that cumulative visual impacts associated with the Rio Grande Terminal "*would* be

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§ 380.1.

[9] CEQ's regulations provide that an agency "shall prepare, publish, and file a supplement to a[n EIS] . . . as a draft and final statement." 40 C.F.R. § 1502.9(3). Although the regulation does not say so explicitly, the only purpose for publishing a draft would be for the public to comment on it. Consistent with the regulation, the Commission has provided for public comment on draft supplemental EIS's. *See, e.g.*, *Magnolia LNC, LLC; Notice of Availability of the Draft Environmental Impact Statement for the Proposed Magnolia Production Capacity Amendment*, 84 Fed. Reg. 52,881 (Oct. 3, 2019); *Florida Southeast Connection, LLC; Transcontinental Gas Pipe Line Company, LLC; Sabal Trail Transmission, LLC; Notice of Availability of the Draft Supplemental Environmental Impact Statement for the Southeast Market Pipelines Project*, 82 Fed. Reg. 16,233 (Oct. 4, 2017).

[10] Order at PP 139, 141.

[11] *Id.* at PP 141-42.

[12] The new condition describes the basic components of the monitoring and mitigation plan that Rio Grande must file for approval, but it leaves it to the company to flesh out the specific monitoring protocol and corrective actions to be employed. In particular, the condition does not say what Rio Grande must do in response to a NAAQS exceedance or how quickly it must do it. *See* Order, App. A, Condition 144.

potentially significant."[13] However, it imposes no new mitigation measures to minimize those impacts. These findings in the Order themselves indicate a supplemental EIS is necessary.

5. The need for a supplemental EIS does not hinge on a definitive finding that environmental impacts will be significant. To the contrary, NEPA requires that an agency prepare an EIS where there "might" be "any" significant environmental impacts.[14] Moreover, "the decision whether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance."[15] Since the Commission has determined that there may be significant air pollution and visual impacts associated with the Rio Grande Terminal, it was required to prepare a supplemental EIS.

6. The procedures employed here run counter to NEPA's fundamental purposes. As the Supreme Court has explained, the statute's EIS requirement "ensures that the agency, *in reaching its decision*, will have available, and will carefully consider, detailed information concerning significant environmental impacts."[16] NEPA's public participation requirements ensure that "relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision."[17] Publishing an EIS "provides a springboard for public comment."[18] By failing to issue a supplemental EIS for public comment prior to today's

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[13] *Id.* at P 163 (emphasis added).

[14] *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs,* 985 F.3d 1032, 1039 (D.C. Cir. 2021) (quoting *Grand Canyon Tr. v. FAA,* 290 F.3d 339, 340 (D.C. Cir. 2002)); *see also Sierra Club v. Peterson,* 717 F.2d 1409, 1415 (D.C. Cir. 1983).

[15] *Stand Up for California! v. U.S. Dep't of the Interior*, 994 F.3d 616, 628 (D.C. Cir. 2021) (quoting *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989)) (internal quotation marks omitted).

[16] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (emphasis added); *see also Marsh*, 490 U.S. at 371 ("[B]y focusing Government and public attention on the environmental effects of proposed agency action . . . NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.") (internal citations omitted); 40 C.F.R. § 1500.1(a) ("The purpose and function of NEPA is satisfied if Federal agencies have considered relevant environmental information, and the public has been informed regarding the decision-making process.").

[17] *Robertson*, 490 U.S. at 349.

[18] *Id.*

Order, the Commission deprived the public of any meaningful opportunity to participate. That, in turn, prevented the Commission from reflecting in its decision today essential information the public generally and affected EJ communities otherwise could have provided on the Commission's new environmental and safety analyses.

7. Embedding the Commission's new environmental and safety analyses in the Order and its appendices is no substitute for the public notice and comment process under NEPA. The Commission does not send out notices of its orders to the mailing list compiled for purposes of the original EIS process. And it certainly does not send targeted notices to members of newly identified EJ communities. Consequently, the hundreds of EJ communities potentially impacted by the Rio Grande LNG Terminal and Rio Bravo Pipeline projects have no practical way of even discovering that they are within the projects' potential impact zone.

8. Failing to allow meaningful public participation is not just some technical error. Rather, public input provides the foundation for an agency's substantive decisions. The procedures used here not only violated NEPA, but also undermined the Commission's ability to engage in reasoned decision-making, as it is required to do under the Administrative Procedure Act (APA).[19] That is because the Commission does not have a complete record reflecting input from the hundreds of newly identified EJ communities, or from the public generally, on the new environmental and safety analyses.

9. Even if the Commission were not legally required to issue a supplemental EIS for public comment, doing so would be the right way to implement the applicable Executive Orders (EOs) and guidance on EJ.[20] These documents call for identification, analysis, and mitigation of impacts on EJ communities. Where agencies have identified potentially

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[19] 5 U.S.C. § 706(2)(A); *see also Motor Vehicle Mfrs. Ass'n of the U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 52 (1983) (requiring that an agency's explanation be a "product of reasoned decisionmaking" under the APA); *Vecinos,* 6 F.4th at 1330 ("[A] petitioner may challenge an agency's environmental justice analysis as arbitrary and capricious under NEPA and the APA."); *Coliseum Square Ass'n v. Jackson*, 465 F.3d 215, 232 (5th Cir. 2006) (finding an agency's environmental justice considerations reviewable under the "arbitrary and capricious" standard of the APA).

[20] The Commission states that it complies with the relevant EOs and guidance. *See* Order at PP 103-04; *see generally* Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994) (1994 EJ EO); Presidential Memorandum, Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, 1 Pub. Papers 241 (Feb. 11, 1994) (1994 EJ Memo); Federal Interagency Working Group on Environmental Justice and NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews* (2016) (Promising Practices Guidance).

affected minority and/or low income communities, the identification "should trigger" an "enhanced outreach effort to assure that low-income and minority populations are engaged in public participation."[21] Section 5-5 of the 1994 EJ EO states that agencies "*shall* work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public."[22] Furthermore, the 1997 CEQ Guidance specifically instructs that agencies "should develop effective public participation strategies" and "overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation."[23] The sad fact is that the Commission has made no effort to inform potentially affected EJ communities of its new environmental and safety analyses, let alone make the analyses "readily accessible" to them. Rather than implementing an "effective public participation strategy," the Commission has shut the door on public participation by embedding its new analyses in the Order.

10. I am particularly troubled that neither the general public nor the newly identified EJ communities will have a meaningful opportunity to comment on the Commission's new air monitoring and mitigation condition or other potential mitigation measures. CEQ's guidance on EJ specifically instructs that "members of the affected communities should be consulted" when an agency is "identifying and developing potential mitigation measures to address environmental justice concerns."[24]

11. To give credit where it is due, the Commission did provide an opportunity for comment on the project sponsors' responses to certain of Commission staff's environmental information requests (EIRs).[25] However, there was *no* opportunity to comment on critical air modeling information used in the Commission staff's cumulative air impacts analysis because that information was submitted after the comment period closed.[26] The necessity for, and value of, allowing public comment on the new analyses

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[21] Council on Envtl. Quality, *Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis* 28 (1998) (1998 CEQ Guidance).

[22] 1994 EJ EO § 5-5(c) (emphasis added); *see also* 1994 EJ EO § 5-5(b) (stating that meeting this public accessibility standard may require, "whenever practicable and appropriate," "translat[ing] crucial public documents, notices, and hearings related to human health or the environment for limited English speaking populations").

[23] CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 9 (1997) (1997 CEQ Guidance) (emphasis added).

[24] 1998 CEQ Guidance at 36.

[25] *See* Order at P 83.

[26] *See id.* at P 87 ("[O]n January 20 and 27, 2023, Rio Grande submitted additional

is evinced by the fact that Vecinos para el Bienestar de la Comunidad Costera and Sierra Club submitted a joint comment letter identifying discrepancies in Texas LNG's and Rio Grande LNG's cumulative air impacts modeling that led staff to direct the companies to reconcile their analyses and submit new cumulative air impact modeling.[27]

12. At the Commission's March 29, 2023, Roundtable on Environmental Justice and Equity in Infrastructure Permitting, all Commissioners acknowledged the importance of appropriately addressing EJ concerns in our proceedings. In this of all cases, where the D.C. Circuit remanded our inadequate EJ analysis, we should translate our good intentions into action and provide EJ communities a meaningful opportunity to participate. Considering our discussion at the Roundtable of how to facilitate EJ communities' full participation, it is especially disheartening that the Order rejects requests to hold public meetings, with Spanish translation, to hear communities' concerns about the projects and our new analyses.[28]

13. I am sensitive to the comments in the record, from project sponsors and others, that the Commission has unduly delayed its response to the court's remand in *Vecinos* and that the delay may postpone benefits the projects offer, including local employment opportunities. More generally, I desire to efficiently process applications for approval of natural gas and LNG projects, as well as the Commission's response to any court directives relating to project approvals. No member of the current Commission had control over the process for, or timing of, the Commission's response to the *Vecinos* court's remand. The question now is what to do with the hand we have been dealt. Taking procedural shortcuts is the wrong answer. In failing to meet its statutory and regulatory obligations, the Commission invites litigation challenging the Order, potentially leading to further delay. For the sake of all stakeholders, including project sponsors and communities impacted by our decisions, we must do better.

14. Finally, I dissent from the Commission's explanation of why it cannot determine the significance of GHG emissions associated with the Rio Grande LNG Terminal and Rio Bravo Pipeline.[29] This section of the Order could be interpreted as the Commission's definitive conclusion that the Social Cost of GHGs protocol is inherently unsuitable for determining the significance of GHG emissions associated with natural gas and LNG

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information regarding the air modeling discrepancies."), P 83 ("[I]nitial comments were due no later than October 21, 2022, and reply comments not later than November 4, 2022.").

[27] *See id.* at PP 87, 137.

[28] *See id.* at P 85.

[29] *See id.* at PP 92-93, 101.

infrastructure projects. Moreover, the Order suggests that there is no other "currently scientifically accepted method that would enable the Commission to determine the significance of reasonably foreseeable GHG emissions."[30] In other recent certificate orders, the Commission has explained that it is not determining the significance of GHG emissions because the issue of how to do so is under consideration in the docket for the Commission's draft GHG Policy Statement.[31] This Order does not say that. Readers therefore might wonder whether this Order has effectively decided some of the central issues raised in the GHG Policy Statement docket.[32]

15. I do not know whether the Social Cost of GHGs protocol or another tool can or should be used to determine significance. That is because the Commission has not seriously studied the answer to that question. The majority has simply decided the method does not work, with no explanation of why the Commission departs from the approach so recently taken in other certificate orders.[33] We have yet to address the voluminous record in the GHG Policy Statement docket, including comments that speak to this question. What I do know is that we should decide the important unresolved issues relating to our assessment of GHG emissions through careful deliberation in a generic proceeding with full transparency.

For the foregoing reasons, I respectfully dissent.

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Allison Clements
Commissioner

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[30] *Id.* at P 93.

[31] *See, e.g.*, *Transcon. Gas Pipe Line Co*., 182 FERC ¶ 61,006, at P 73 & n.174 (2023); *Columbia Gas Transmission, LLC*, 182 FERC ¶ 61,171, at P 46 & n.93 (2023).

[32] *See* Docket No. PL21-3.

[33] To depart from prior precedent without explanation violates the Administrative Procedure Act. *See, e.g.*, *West Deptford Energy, LLC v. FERC*, 766 F.3d 10, 17 (D.C. Cir. 2014) ("[T]he Commission cannot depart from [prior] rulings without providing a reasoned analysis.") (citations omitted).

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